DOCUMENT RESUME

ED 359 350 CE 063 947

TITLE	Respiratory Therapy and Respiratory Therapy Technician. Florida Vocational Program Guide.
INSTITUTION	Florida State Univ., Tallahassee. Center for Instructional Development and Services.
SPONS AGENCY	Florida State Dept. of Education, Tallahassee. Div. of Vocational, Adult, and Community Education.
PUB DATE	Jul 90
NOTE	131p.
AVAILABLE FROM	Division of Vocational, Adult, and Community Education, Bureau of Career Development and Educational Improvement, Florida Education Center, Tallahassee, FL 32399-0400 (order no. HO 199 BK 90, guide; HO 202 BK 90, Career Merit Achievement Plan).
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Allied Health Occupations Education; Behavioral Objectives; Competency Based Education; *Job Skills; Medical Assistants; Medical Services; Occupational Information; *Paraprofessional Personnel; Performance; Postsecondary Education; Program Development; Program Evaluation; Program Guides; *Program Implementation; *Respiratory Therapy; Secondary Education; State Programs; Statewide Planning; *Therapists
IDENTIFIERS	Florida

ABSTRACT

This program guide identifies primary considerations in the organization, operation, and evaluation of respiratory therapy and respiratory therapy technician programs. An occupational description and program content are presented. The curriculum framework specifies the exact course title, course number, levels of instruction, major course content, laboratory activities, special notes, major course concepts, and intended outcomes. Student performance standards are a resource list of job-specific competencies. The next section includes facility design criteria, information on safety, and suggested equipment and supplies. The section on implementation considers student learning guides, student organization participation, and sample student code of ethics statement. A section on professional considerations addresses certification and lists professional organizations and support services. The final section lists the following instructional resources: a contact for information on a test item bank; sources of print materials, software, and instructor-developed materials; journals recommended and study resources developed by the National Board for Respiratory Care; instructor-recommended materials; and Florida Educational Information Service services. A sample student learning guide is appended. Two Career Merit Achievement Plans (Career MAP) display the student performance standards required by the local education agency and documents students' level of achievement. (YLB)

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FLORIDA VOCATIONAL
PROGRAM GUIDE FOR

RESPIRATORY THERAPY AND RESPIRATORY THERAPY TECHNICIAN

CE 063 947

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Bureau of Vocational Program and Staff Development
Division of Vocational, Adult, and Community Education
Department of Education
Florida Education Center
Tallahassee, FL 32399
(904) 488-0484

FLORIDA VOCATIONAL
PROGRAM GUIDE FOR

RESPIRATORY THERAPY AND RESPIRATORY THERAPY TECHNICIAN

State of Florida
Department of Education
Tallahassee, Florida
Betty Castor, Commissioner
Affirmative action/equal opportunity employer

Division of Vocational, Adult, and Community Education
Bureau of Vocational Program and Staff Development

July, 1990

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ACKNOWLEDGMENTS

The Division would like to thank the following instructors who have contributed to the development of the materials included in this publication:

Charles Carroll
Chair, Allied Health Department
Daytona Beach Community College
Daytona Beach

Marsha Karkheck
Department Chair, Respiratory Therapy Technician
St. Petersburg Voc-Tech Institute
St. Petersburg

Stephen Mikles
Program Director, Respiratory Care
St. Petersburg Junior College
Pinellas Park

Carol Miller
Chair, Cardiopulmonary Sciences
Miami Dade Community College
Miami

John Prince
Department Head, Respiratory Care
Broward Community College
Fort Lauderdale

James Woods
Director, Allied Health
Florida Community College at Jacksonville
Jacksonville

David Yonutas
Coordinator, Respiratory Therapy Program
Santa Fe Community College
Gainesville

Appreciation is also extended to Diane Olsen, project manager; Fred Marrinan, assistant project manager; Donald Caswell, editor; Robert Celander, graphic designer; and Margaret Campbell, information researcher, all of the Center for Instructional Development and Services.

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INTRODUCTION

The *Florida Vocational Program Guide for Respiratory Therapy and Respiratory Therapy Technician* has been developed to provide information that will be useful to local administrators, regional coordinating councils, teachers, and others charged with the responsibility of offering vocational education training in Health Occupations in school districts, area vocational centers, and community colleges. The final planning, implementation, and evaluation of any educational program, however, must be done within the context of local conditions and local needs.

Many of the elements involved in the creation and maintenance of a vocational education program are generic to all subject areas; these issues are addressed in detail in the *Florida Vocational Program Implementation Guide (FVPIG)*, **which should be considered an essential companion piece to this document.** The *FVPIG* contains information on the following:

- the importance of, as well as development strategies for, student learning guides
- information addressing concerns about program planning and implementation
- teacher requirements, updating, and certification
- program-evaluation requirements
- in-depth program-component description.

This *Florida Vocational Program Guide for Respiratory Therapy and Respiratory Therapy Technician* will serve to identify particular considerations in the organization, operation, and evaluation of these specific vocational education programs.

This program guide will help ensure equivalency. Respiratory therapy and respiratory therapy technician programs, if implemented throughout Florida according to the criteria described in this document, will help many citizens fill important roles in our state and national work force.

The respiratory care committee emphasizes that articulation among AMA-accredited programs is encouraged. Several options are available. Students may enter the respiratory therapy (RT) program (usually for two years) or the respiratory therapy technician (RTT) program (usually for one year). Those who complete the RTT program may continue their training by entering the RT program, either immediately or at some later date.

PROGRAM CONTENT AND STRUCTURE

The content of the respiratory therapy and respiratory therapy technician programs is based on occupational competencies and employability skills required for entry into the respiratory care occupations. The basic content of these programs is described in the Florida Curriculum Framework and Student Performance Standards (SPSs).

The respiratory therapy and respiratory therapy technician programs include learning experiences, both classroom and practical, that provide students with career information and job requirements for respiratory therapy (DOT 079.361-010) and respiratory therapy technician (OES 32302.70). They provide students with an initial exposure to the skills and attitudes associated with careers in related respiratory care occupations. The basic skills and attitudes related to these occupations are indicated as intended outcomes in the Curriculum Frameworks of this guide.

Job Titles and Descriptions

Job Title: Respiratory Therapist

The Board of Directors of the American Association for Respiratory Care and the Board of Medical Advisors of the American Medical Association have approved the following as the official definition of Respiratory Therapy:

> Respiratory Therapy is an allied health specialty employed with medical direction in the treatment, management, control, diagnostic evaluation, and care of patients with deficiencies and abnormalities of the cardiopulmonary system.
>
> Respiratory Therapy shall mean the therapeutic use of the following: medical gases and administration apparatus, environmental control systems, humidification, aerosols, medications, ventilatory support, bronchopulmonary drainage, pulmonary rehabilitation, cardiopulmonary resuscitation, and airway management.
>
> Specific testing techniques are employed in respiratory therapy to assist in diagnosis, monitoring, treatment, and research. This shall be understood to include measurement of ventilatory volumes, pressures, flows, blood gas analysis, and other related physiologic monitoring.

Job Title: Respiratory Therapy Technician

The following description is based on material published by the Joint Review Committee for Respiratory Therapy Education.

> Under the supervision of a respiratory therapist and/or physician, the respiratory therapy technician administers general respiratory care. The respiratory therapy technician may review, collect, and evaluate relevant patient data; assemble and maintain respiratory care equipment; select and perform appropriate disinfecting techniques; and initiate, conduct, and modify prescribed therapeutic procedures.

Curriculum Frameworks and Student Performance Standards

Program objectives and content should be consistent with the Vocational Education Program Courses Standards as approved by the Florida State Board of Education. Provided on the following pages are two sets of Curriculum Framework and Student Performance Standards: for respiratory therapy and respiratory therapy technician courses as listed in the official *Vocational Education Program Courses Standards* document. Since these SPSs are continually updated, you should check with your district health occupations supervisor or the regional program specialist for a current version every year.

CURRICULUM FRAMEWORK
FLORIDA DEPARTMENT OF EDUCATION

PROGRAM AREA: Health Occupations
EFFECTIVE DATE: July, 1990

PROGRAM TITLE: Respiratory Therapy

CODE NUMBER: Secondary ___ Postsecondary ___
Florida CIP 0317.081800

SECONDARY SCHOOL CREDITS ___ COLLEGE CREDITS X POSTSECONDARY ADULT VOCATIONAL CREDITS ___

APPLICABLE LEVEL(S): ___7-9 ___9-12 ___Postsecondary Adult Vocational
___ Postsecondary Vocational ___ Other ___

CERTIFICATION COVERAGE:

I. **Major Concepts/Content.** The purpose of this program is to prepare students for employment as respiratory therapists (079.361-010) or to provide supplemental training for persons previously or currently employed in this occupation.

The respiratory therapist specializes in the application of scientific knowledge and theory to practical, clinical problems of respiratory care. The respiratory therapist is qualified to assume primary clinical responsibility for all respiratory care modalities, including responsibilities involved in supervision of respiratory therapy technician functions.

The respiratory therapist may be required to exercise considerable independent, clinical judgment in the respiratory care of patients under the direct or indirect supervision of a physician. Further, the therapist is capable of serving as a technical resource person to the physician with regard to current practices in respiratory care, and to the hospital staff as to effective and safe methods for administering respiratory therapy.

The respiratory therapist's scope of patient care in an institution or home environment includes, but is not limited to, quality control of all units, intermittent positive pressure breathing (IPPB); humidity/aerosol therapy; medical gas administration; broncho-pulmonary drainage; mechanical ventilation; airway management; emergency care; pulmonary-function testing; cardiorespiratory rehabilitation; measurement and reporting of cardiopulmonary sampling, infection control; cardiorespiratory drug administration; and physiologic monitoring.

Content includes biological and physical sciences basic to understanding the functioning of the cardiopulmonary system. Content may include courses in anatomy, physiology, medical terminology, chemistry, mathematics, microbiology, physics, therapeutic/diagnostic procedures, clinical medicine, and patient assessment. The instruction is more extensive for the respiratory therapist than for the respiratory therapy technician. The program of study also includes social sciences basic to understanding how to relate with patients, including such topics as psychology, communication skills, and medical ethics. Clinical training in routine and special procedures applicable to neonatal, pediatric, and adult geriatric patients and those with varying degrees of cardiopulmonary impairment are also provided. The content also includes computer science.

Reinforcement of basic skills in English, mathematics, and science appropriate for the job preparatory programs occurs through classroom instruction and applied laboratory procedures or practice.

II. **Laboratory/Clinical Activities.** Clinical education and laboratory activities shall be supervised and should include the following: a clinical education center that offers a sufficient and well-balanced variety of respiratory therapy procedures and equipment; supervision of all clinical assignments; integration of the planning and structure of clinical education with the didactic portion of the curriculum; laboratory practicum for student demonstration and practice of essential clinical skills under simulated conditions prior to assuming actual clinical responsibilities; and laboratory practicum for principles and procedures of respiratory care, their evaluation and assurance, and a valid plan for clinical assignments and rotations.

III. **Special Note.** Health Occupations Students of America, Inc., is an appropriate vocational student organization for providing leadership training experience and for reinforcing specific vocational skills. When provided, these activities are considered an integral part of this program. Student membership in the Florida Society for Respiratory Care and the American Association for Respiratory Care is encouraged. The program should also provide Basic Cardiac Life Support certification.

The program must be accredited by the American Medical Association Committee on Allied Health Education and Accreditation. Program compliance with the essentials and guidelines is monitored by the Joint Review Committee for Respiratory Therapy Education. State credentialing will be done in accordance with **Chapter 468, F.S.**

The typical length of this program for an average achieving student is two years.

IV. **Intended Outcomes.** After successfully completing this program, the student will be able to:

01. Select, review, obtain, and interpret patient data.

02. Select, assemble, and check equipment for proper function, operation, cleanliness, and calibration.
03. Initiate and conduct therapeutic procedures; recognize when prescribed therapeutic procedure is inappropriate; and follow proper protocol for notification.
04. Maintain records and communications.
05. Perform cardiorespiratory diagnostic testing, including pulmonary-function testing.
06. Draw arterial and mixed venous blood samples and analyze blood gases and hemoglobin values.
07. Perform mechanical ventilation.
08. Perform infection-control techniques.
09. Perform cleaning, sterilization, and general maintenance of equipment.
10. Instruct patient in cardiorespiratory rehabilitation.
11. Demonstrate employability skills.
12. Adapt all appropriate respiratory care procedures to the home care environment.
13. Perform advanced respiratory care procedures.
14. Administer cardiorespiratory drugs.
15. Assist the physician with special respiratory therapy procedures.
16. Demonstrate leadership and supervisory skills.
17. Demonstrate knowledge of immune-deficiency diseases, including AIDS.

STUDENT PERFORMANCE STANDARDS EFFECTIVE DATE: July, 1990

PROGRAM AREA: Health Occupations SECONDARY NUMBER: ________

PROGRAM TITLE: Respiratory Therapy POSTSECONDARY NUMBER: 0317.081800

01.0 SELECT, REVIEW, OBTAIN, AND INTERPRET PATIENT DATA--The student will be able to:

01.01 Review existing data in patient record.
01.02 Collect and evaluate additional pertinent clinical information by assessing patient's overall respiratory status, including inspection, palpation, percussion, and auscultation.
01.03 Collect and evaluate additional pertinent clinical information by inspection of chest x ray and review of ABGs.
01.04 Perform and evaluate bedside pulmonary assessment and procedures (Vt, FVC, NIF, etc.).
01.05 Interview and evaluate patient's current medical status.
01.06 Recommend and/or obtain additional pertinent data based on patient assessment.
01.07 Perform and evaluate appropriate cardiorespiratory tests, including EKG.
01.08 Determine appropriateness of prescribed respiratory care plan and recommend modification where indicated.
01.09 Participate in development of respiratory care plan.

02.0 SELECT, ASSEMBLE, AND CHECK EQUIPMENT FOR PROPER FUNCTION, OPERATION, CLEANLINESS, AND CALIBRATION--The student will be able to:

02.01 Select suitable equipment from available supply appropriate to respiratory care plan.
02.02 Assemble parts and check for completeness, condition, and cleanliness.
02.03 Check calibration and operation of device and correct malfunctions or send for repair (quality control).
02.04 Clean and disinfect used equipment; wrap and sterilize using appropriate method (gas, temperature, and chemical) and following Centers for Disease Control (CDC) guidelines.
02.05 Store equipment, transport equipment, and identify gases.
02.06 Maintain inventory, monitor oxygen storage systems, and change a cylinder bank.
02.07 Transport high-pressure cylinders; check dates and pressure.

03.0 INITIATE AND CONDUCT THERAPEUTIC PROCEDURES; RECOGNIZE WHEN PRESCRIBED THERAPEUTIC PROCEDURE IS INAPPROPRIATE; AND FOLLOW PROPER PROTOCOL FOR NOTIFICATION--The student will be able to:

03.01 Explain planned therapy and goals to patients in nontechnical, understandable terms to achieve optimal therapeutic outcome.
03.02 Protect patient from nosocomial infection by adherence to infection-control policies and procedures.

03.03 Conduct prescribed therapeutic procedures to achieve the maintenance of a patient airway, including the care of artificial airways.
03.04 Perform sterile suctioning technique of endotracheal tube and nasopharyngeal/oropharyngeal airway (for secretion removal).
03.05 Conduct prescribed therapeutic procedures to achieve the removal of bronchopulmonary secretions, including the preparation of specimens for analysis.
03.06 Conduct prescribed therapeutic procedures to achieve adequate spontaneous and mechanical ventilation.
03.07 Conduct prescribed therapeutic procedures to achieve adequate arterial and tissue oxygenation, including CPAP and/or special therapeutic gases.
03.08 Evaluate and monitor prescribed respiratory therapy and patient's response to therapy.
03.09 Make necessary recommendation for modification in therapeutic procedures based on patient's response and/or appropriate laboratory data, following proper protocol.
03.10 Recommend modification in the respiratory care prescription based on the patient's response.
03.11 Initiate and conduct pulmonary rehabilitation and home care.
03.12 Terminate treatments based on patient's adverse reaction to any type of therapy being administered.
03.13 Modify treatment techniques within the prescription.
03.14 Verify computations and note erroneous data.
03.15 Initiate, conduct, and modify prescribed therapy.
03.16 Initiate and provide emergency resuscitation.
03.17 Perform cardiopulmonary resuscitation on an infant patient.
03.18 Perform cardiopulmonary resuscitation on a child.
03.19 Perform one-rescuer cardiopulmonary resuscitation on an adult patient.
03.20 Perform two-rescuer cardiopulmonary resuscitation on an adult patient.
03.21 Perform obstructed airway maneuver on an unconscious adult patient.
03.22 Perform obstructed airway maneuver on a conscious adult patient.
03.23 Set up, assist with, and perform oral intubation on an unconscious adult patient, or model.
03.24 Ventilate patient with a manual resuscitator with mask.
03.25 Ventilate patient with demand valve unit with mask.
03.26 Add an intermittent mandatory ventilation setup with a reservoir bag to a ventilator circuit.
03.27 Add positive end expiratory pressure (PEEP) to ventilator circuit.
03.28 Perform proper extubation of adult patient.
03.29 Monitor return to normal physiology; reintubate if necessary.

04.0 MAINTAIN RECORDS AND COMMUNICATIONS--The student will be able to:

04.01 Use computer system to access and input patient data, when appropriate.
04.02 Chart on medical record: record therapy and results using conventional terminology as required by hospital policy and regulatory agencies.

04.03 Be familiar with and use departmental policy and procedures manual; actively participate in recommending updates.
04.04 Consistently display a professional and positive attitude in all communications.
04.05 Display respect for patients regardless of race, religion, color, creed, sex, age, or diagnosis.
04.06 Maintain confidentiality of all patient records and information.

05.0 PERFORM CARDIORESPIRATORY DIAGNOSTIC TESTING, INCLUDING PULMONARY-FUNCTION TESTING--The student will be able to:

05.01 Obtain pulmonary history.
05.02 Perform simple spirometry maneuvers, including tidal volume, minute volume, and vital capacity.
05.03 Compute patient normal values.
05.04 Recognize normal vs. abnormal results.
05.05 Measure lung volumes and capacities.
05.06 Perform diffusion studies.
05.07 Perform gas distribution tests.
05.08 Perform and evaluate cardiovascular monitoring.

06.0 DRAW ARTERIAL AND MIXED VENOUS BLOOD SAMPLES AND ANALYZE BLOOD GASES AND HEMOGLOBIN VALUES--The student will be able to:

06.01 Obtain appropriate equipment.
06.02 Maintain quality control on blood gas analyzer and co-oximeter.
06.03 Identify patient, introduce self, and explain procedure.
06.04 Perform Allen test or other technique to assess collateral circulation.
06.05 Wash hands, prepare and collect sample from appropriate site, and place in ice slush.
06.06 Apply pressure for required time, when appropriate.
06.07 Place blood sample into the blood gas analyzer/co-oximeter, according to manufacturer's directions.
06.08 Perform entire procedure following Centers for Disease Control (CDC) guidelines and taking universal precautions.

07.0 PERFORM MECHANICAL VENTILATION--The student will be able to:

07.01 Recognize indications for ventilation, verifying physician's order as necessary.
07.02 Select correct type and/or mode of ventilation.
07.03 Determine that ventilator is functioning safely and properly.
07.04 Connect mechanical ventilator to patient.
07.05 Monitor patient physiology and make appropriate ventilator changes if necessary.
07.06 Address needs of the patient, including psychological, physical, and emotional.
07.07 Recognize indications for adjunctive airway maneuvers.
07.08 Determine patient's readiness for weaning.

07.09 Wean patient from ventilator.
07.10 Monitor patient's return to normal physiology; reventilate if necessary.

08.0 PERFORM INFECTION-CONTROL TECHNIQUES--The student will be able to:

08.01 Apply infection-control techniques following Centers for Disease Control (CDC) guidelines and taking universal precautions.
08.02 Don isolation cap, mask, gown, and gloves.
08.03 Perform prescribed therapy in an isolation setting.
08.04 Discard/double-bag used equipment.
08.05 List the types of isolation with the required apparel/procedures, etc.
08.06 Chart activity related to isolation setting.

09.0 PERFORM CLEANING, STERILIZATION, AND GENERAL MAINTENANCE OF EQUIPMENT--The student will be able to:

09.01 Maintain a use record on special equipment.
09.02 Maintain equipment maintenance records.
09.03 Maintain preventive maintenance records.
09.04 Clean used equipment; wrap and sterilize using appropriate method (gas, temperature, and chemical).
09.05 Operate sterilizer, if applicable, or send equipment to central service.
09.06 Store returned sterilized equipment safely, being mindful of sterilization expiration dates.
09.07 Perform routine maintenance according to manufacturer's directions.

10.0 INSTRUCT PATIENT IN CARDIORESPIRATORY REHABILITATION--The student will be able to:

10.01 Instruct patient and family in equipment cleaning, care, and use.
10.02 Instruct patient and family in proper breathing/coughing exercises.
10.03 Instruct patient and family in physical exercise and in activities of daily living.
10.04 Instruct patient and family about the disease state.
10.05 Instruct patient and family about when to call the physician.
10.06 Instruct patient and family in how to recognize deterioration in physical status.
10.07 Instruct patient and family in proper drug dosage and administration techniques and the importance of the therapy.
10.08 Instruct patient and family in proper therapy techniques.

11.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

11.01 Conduct a job search.
11.02 Secure information about a job.
11.03 Identify documents that may be required when applying for a job.
11.04 Complete a job application.
11.05 Demonstrate competence in job interview techniques.
11.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.

11.07 Identify acceptable work habits.
11.08 Demonstrate knowledge of how to make job changes appropriately.
11.09 Demonstrate acceptable employee health habits.
11.10 Identify state licensure and continuing education requirements.

12.0 ADAPT ALL APPROPRIATE RESPIRATORY CARE PROCEDURES TO THE HOME CARE ENVIRONMENT--The student will be able to:

12.01 Provide for O_2 administration, aerosal and bronchial hygiene therapy, and lung expansion therapy in the home.
12.02 Arrange for life support and monitoring (i.e., mechanical ventilation, apnea monitoring, and nasal CPAP) in the home.
12.03 Instruct patient, family, and other health care workers on the appropriate use, operation, cleaning, and maintenance of respiratory care equipment.
12.04 Perform patient monitoring and assessment in the home.
12.05 Recognize and report symptoms of abuse and neglect.

13.0 PERFORM ADVANCED RESPIRATORY CARE PROCEDURES--The student will be able to:

13.01 Assume primary clinical responsibility for all respiratory care modalities.
13.02 Check physician's orders or consult with physician.
13.03 Design and implement respiratory care plan as appropriate.
13.04 Perform pulmonary artery sampling.
13.05 Perform cardiac output procedures.
13.06 Perform arterial line setup and monitoring.
13.07 Perform transcutaneous gas monitoring.
13.08 Perform noninvasive monitoring techniques as appropriate.
13.09 Perform pulseoximetry monitoring.
13.10 Perform various advanced procedures, based on local practice.
13.11 Remove, clean, and replace inner canula tube and/or replace tracheostomy tube, as ordered.
13.12 Perform various mathematical computations dealing with cardiopulmonary assessment.
13.13 Intubate infant.
13.14 Initiate infant mechanical ventilation with appropriate ventilator and parameter, including CPAP and PEEP.
13.15 Extubate infant, within recommended criteria.
13.16 Monitor return to normal physiology; reventilate if necessary.

14.0 ADMINISTER CARDIORESPIRATORY DRUGS--The student will be able to:

14.01 Demonstrate knowledge of drug classifications, actions and uses, route of administration and usual adult doses, mathematics needed to calculate divided or children's dosage, contraindications, drug interactions, adverse reactions, how supplied, mixing instructions, storage, and laboratory test interferences.
14.02 Recognize the critical importance of this activity and follow directions.
14.03 Verify physician's orders.

14.04 Prepare medication for administration.
14.05 Identify patient; introduce self.
14.06 Administer drug.
14.07 Document administering of drug in all appropriate records.
14.08 Recognize the symptoms of drug idiosyncracies.
14.09 Identify adverse drug reactions and take appropriate action.
14.10 Recognize anaphylactic shock.

15.0 ASSIST THE PHYSICIAN WITH SPECIAL RESPIRATORY THERAPY PROCEDURES--The student will be able to:

15.01 Assist with insertion and maintenance of an umbilical arterial and/or venous catheter.
15.02 Assist with bronchoscopy, chest tubes, and cardiac catheterizations.
15.03 Assist with Swan-Ganz catherization and other invasive monitoring.
15.04 Assist with thoracentesis and tracheostomy.

16.0 DEMONSTRATE LEADERSHIP AND SUPERVISORY SKILLS--The student will be able to:

16.01 Perform evaluations of subordinate personnel, maintaining objectivity.
16.02 Make assignments to personnel within the department.
16.03 Observe employee behavior and counsel re attitudes, demeanor, appearance, protocol, and interaction.
16.04 Encourage/provide continuing education activities.
16.05 Observe subordinate performing procedures; correct discrepancies.
16.06 Instruct subordinates in new procedures/new equipment.
16.07 Demonstrate knowledge of productivity and control of resources, using budgeting inventory control and ordering of supplies.
16.08 Recognize state-required licensure and documentation (i.e., experiential and public display).

17.0 DEMONSTRATE KNOWLEDGE OF IMMUNE-DEFICIENCY DISEASES, INCLUDING AIDS--The student will be able to:

17.01 Distinguish between fact and fallacy about the transmission and treatment of immune-deficiency diseases, including HIV infection.
17.02 Identify community resources and services available to the victims of immune-deficiency diseases.
17.03 Identify at-risk behaviors which promote the spread of AIDS and the public education necessary to combat the spread of immune-deficiency diseases.
17.04 Apply infection-control techniques designed to prevent the spread of diseases to patients, following Centers for Disease Control (CDC) guidelines.
17.05 Demonstrate knowledge of the legal aspects of AIDS.

CURRICULUM FRAMEWORK
FLORIDA DEPARTMENT OF EDUCATION

PROGRAM AREA: Health Occupations
EFFECTIVE DATE: July, 1990

PROGRAM TITLE: Respiratory Therapy Technician

CODE NUMBER: Secondary ________ Postsecondary RET0100

Florida CIP 0317.081900

SECONDARY SCHOOL CREDITS ___ COLLEGE CREDITS ___ POSTSECONDARY ADULT VOCATIONAL CREDITS X

APPLICABLE LEVEL(S): ___7-9 ___9-12 X Postsecondary Adult Vocational

___ Postsecondary Vocational x Other 30, 31

CERTIFICATION COVERAGE: RESP THER @7 RESP TEC 7

I. **Major Concepts/Content.** The purpose of this program is to prepare students for employment as respiratory therapists (32302170) or respiratory therapy technicians, or to provide supplemental training for persons previously or currently employed in these occupations.

The respiratory therapy technician specializes in the technical details of general respiratory therapeutics. Technicians may assume clinical responsibility for specified respiratory care modalities involving the application of well-defined therapeutic techniques under the direct or indirect supervision of a therapist or physician.

The respiratory therapy technician's role does require the exercising of independent clinical judgment. The technician is expected to adjust or modify therapeutic techniques within well-defined procedures and based on a limited range of patient responses. Therefore, the effective use of the technician, especially in the critical care setting, requires that a respiratory therapist or a physician be available for consultation.

The respiratory therapy technician's scope of patient care includes, but is not limited to, the following respiratory care modalities under direct or indirect supervision of a therapist or physician: intermittent positive pressure breathing (IPPB); humidity/aerosol therapy, including the administration of aerosolized medicants under physician prescription; medical gas therapy; pulmonary drainage procedures; cardiopulmonary resuscitation; pulmonary-function testing; drawing/analyzing arterial and venous blood gases; and airway management. Further, the technician may perform continuous ventilation, cleaning, sterilization, infection control, cardiorespiratory rehabilitation, and general maintenance of equipment.

The content includes, but is not limited to, biological and physical sciences basic to understanding the functioning of the cardiopulmonary systems, including anatomy, physiology, medical terminology, chemistry, mathematics, microbiology, physics, therapeutic procedures, clinical medicine, and clinical experiences. Clinical training in routine and special procedures applicable to neonatal, pediatric, adult, and geriatric patients is also provided. The program of study also includes social sciences basic to understanding how to relate to patients and includes such topics as psychology, communication skills, and medical ethics. The content also includes computer science.

Reinforcement of basic skills in English, mathematics, and science appropriate for the job preparatory programs occurs through vocational classroom instruction and applied laboratory procedures or practice.

II. **Laboratory/Clinical Activities.** Clinical education and laboratory activities shall be supervised and should include the following: a clinical education center that offers a sufficient and well-balanced variety of respiratory therapy examinations and equipment; supervision of all clinical assignments; integration of the planning and structure of clinical education with the didactic portion of the curriculum; laboratory practicum for student demonstration and practice of essential clinical skills under simulated conditions prior to assuming actual clinical responsibilities; and a laboratory practicum for principles and procedures of respiratory care, their evaluation and assurance, and a valid plan for clinical assignments and rotations.

III. **Special Note.** Health Occupations Students of America, Inc., is an appropriate vocational student organization for providing leadership training experience and for reinforcing specific vocational skills. When provided, these activities are considered an integral part of this program. Student membership in both the American Association for Respiratory Care and the Florida Society for Respiratory Care is encouraged.

The program must be approved by the American Medical Association, Committee on Allied Health Education and Accreditation. Program compliance with the essentials and guidelines are monitored by the Joint Review Committee for Respiratory Therapy Education.

The cooperative method of instruction may be used for this program. Whenever the cooperative method is offered, the following is required for each student: a training plan, signed by the student, the instructor, and the employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; and a workstation that reflects equipment, skills, and tasks relevant to the student's career goal. Students must receive compensation for work performed under the cooperative method of instruction.

In accordance with **Section 233.0695 F.S.**, the minimum basic skills grade levels required for this postsecondary adult vocational program are: Mathematics 10.0, Language 11.0. These grade level numbers corresponds to grade equivalent scores obtained on state-designated basic skills examinations.

To be transferable statewide between institutions, this program/course must have been reviewed and a "transfer value" assigned the curriculum content by the appropriate Statewide Course Numbering System discipline committee. This does not preclude institutions from developing specific program or course articulation agreements with each other.

The typical length of this program for the average achieving student is approximately 12 months.

IV. **INTENDED OUTCOMES.** After successfully completing this program, the graduate will be able to:

01. Select, review, obtain, and interpret patient data.
02. Select, assemble, and check equipment for proper function, operation, cleanliness, and calibration.
03. Initiate and conduct therapeutic procedures; recognize when prescribed therapeutic procedure is inappropriate; and follow proper protocol for notification.
04. Maintain records and communications.
05. Perform pulmonary-function testing.
06. Draw arterial and venous blood samples and analyze blood gases and hemoglobin values.
07. Perform mechanical ventilation.
08. Perform infection-control techniques.
09. Perform cleaning, sterilization, and general maintenance of equipment.
10. Instruct patient in cardiorespiratory rehabilitation and home care.
11. Demonstrate employability skills.
12. Administer cardiorespiratory drugs.
13. Assist a physician performing special procedures, as appropriate.
14. Demonstrate knowledge of immune-deficiency diseases, including AIDS.

STUDENT PERFORMANCE STANDARDS
EFFECTIVE DATE: July, 1990
PROGRAM AREA: Health Occupations
SECONDARY NUMBER: 8500610
PROGRAM TITLE: Respiratory Therapy Technician
POSTSECONDARY NUMBER: HEV0221

01.0 SELECT, REVIEW, OBTAIN, AND INTERPRET PATIENT DATA--The student will be able to:

01.01 Review existing data in patient record.
01.02 Collect and evaluate additional pertinent clinical information by assessing patient's overall cardiorespiratory status, including inspection, palpation, percussion, auscultation, and vital signs.
01.03 Collect and evaluate additional pertinent clinical information by inspection of chest x ray and review of ABGs.
01.04 Perform and evaluate bedside pulmonary assessment and procedures (Vt, FVC, NIF, etc.).
01.05 Interview and evaluate patient's current medical status.
01.06 Recommend and/or obtain additional pertinent data based on patient assessment.
01.07 Perform and evaluate appropriate cardiorespiratory tests.
01.08 Determine appropriateness of prescribed respiratory care plan and recommend modification where indicated.
01.09 Participate in development of respiratory care plan.

02.0 SELECT, ASSEMBLE, AND CHECK EQUIPMENT FOR PROPER FUNCTION, OPERATION, CLEANLINESS, AND CALIBRATION--The student will be able to:

02.01 Select suitable equipment from available supply appropriate to respiratory care plan.
02.02 Assemble parts and check for completeness, condition, cleanliness, and calibration.
02.03 Check calibration and operation of device and correct malfunctions or send for repair (quality control).
02.04 Clean and disinfect used equipment; wrap and sterilize using appropriate method (gas, temperature, and chemical) and following Centers for Disease Control (CDC) guidelines.
02.05 Maintain, store, and transport equipment and identify gases.
02.06 Maintain and monitor oxygen storage systems and cylinder banks.

03.0 INITIATE AND CONDUCT THERAPEUTIC PROCEDURES; RECOGNIZE WHEN PRESCRIBED THERAPEUTIC PROCEDURE IS INAPPROPRIATE; AND FOLLOW PROPER PROTOCOL FOR NOTIFICATION--The student will be able to:

03.01 Explain planned therapy and goals to patients in nontechnical, understandable terms to achieve optimal therapeutic outcome.
03.02 Protect patient from nosocomial infection by adherence to infection-control policies and procedures.
03.03 Conduct prescribed therapeutic procedures to achieve the maintenance of a patient airway, including the care of artificial airways.

03.04 Perform sterile suctioning technique of endotracheal tube and nasopharyngeal/oropharyngeal airway (for secretion removal).
03.05 Conduct prescribed therapeutic procedures to achieve the removal of bronchopulmonary secretions, including the preparation of specimens for analysis.
03.06 Conduct prescribed therapeutic procedures to achieve adequate spontaneous and mechanical ventilation.
03.07 Conduct prescribed therapeutic procedures to achieve adequate arterial and tissue oxygenation, including CPAP and/or special therapeutic gases.
03.08 Evaluate and monitor prescribed respiratory therapy and patient's response to therapy.
03.09 Initiate, conduct, and modify prescribed therapy based on patient's response and/or appropriate laboratory data, within the limitations of the prescription.
03.10 Initiate and conduct pulmonary rehabilitation and home care.
03.11 Terminate treatments based on patient's adverse reaction to any type of therapy being administered.
03.12 Perform and verify required computations; note erroneous data.
03.13 Initiate and provide emergency resuscitation.
03.14 Perform cardiopulmonary resuscitation on an infant patient.
03.15 Perform cardiopulmonary resuscitation on a child.
03.16 Perform one-rescuer cardiopulmonary resuscitation on an adult patient.
03.17 Perform two-rescuer cardiopulmonary resuscitation on an adult patient.
03.18 Perform obstructed airway maneuver on an unconscious adult patient.
03.19 Perform obstructed airway maneuver on a conscious adult patient.
03.20 Set up and assist with oral intubation on an unconscious adult patient.
03.21 Ventilate patient with a manual resuscitator with mask.
03.22 Ventilate patient with demand valve unit with mask.
03.23 Add an intermittent mandatory ventilation setup to a ventilator circuit.
03.24 Add positive end expiratory pressure (PEEP) to ventilator circuit.
03.25 Perform extubation of adult patient.
03.26 Monitor return to normal physiology; reintubate if necessary.

04.0 MAINTAIN RECORDS AND COMMUNICATIONS--The student will be able to:

04.01 Use computer system to access and input patient data, as appropriate.
04.02 Chart on medical record: record therapy and results using conventional terminology as required by hospital policy and regulatory agencies.
04.03 Utilize departmental policy manual.
04.04 Consistently display a professional and positive attitude in all communications.
04.05 Display respect for patients regardless of race, religion, color, creed, sex, age, or diagnosis.
04.06 Maintain confidentiality of all patient records and information.

05.0 PERFORM PULMONARY-FUNCTION TESTING--The student will be able to:

05.01 Obtain pulmonary history.

05.02 Perform simple spirometry maneuvers, including tidal volume, minute volume, and vital capacity.
05.03 Compute patient normal values.
05.04 Recognize normal vs. abnormal results.
05.05 Measure lung volumes and capacities.
05.06 Perform diffusion studies.
05.07 Perform gas distribution tests.

06.0 DRAW ARTERIAL AND VENOUS BLOOD SAMPLES AND ANALYZE BLOOD GASES AND HEMOGLOBIN VALUES--The student will be able to:

06.01 Obtain appropriate equipment.
06.02 Maintain quality control on blood gas analyzer and co-oximeter.
06.03 Identify patient, introduce self, and explain procedure.
06.04 Perform Allen test or other technique to assess collateral circulation; analyze result.
06.05 Wash hands, prepare and collect sample from appropriate site, and place in ice slush.
06.06 Apply pressure for required time.
06.07 Place blood sample into the blood gas analyzer/co-oximeter according to manufacturer's directions.
06.08 Perform entire procedure following Centers for Disease Control (CDC) guidelines and taking universal precautions.

07.0 PERFORM MECHANICAL VENTILATION--The student will be able to:

07.01 Recognize indications for ventilation, verifying physician's order as necessary.
07.02 Select correct type and/or mode of ventilation.
07.03 Determine that ventilator is functioning safely and properly.
07.04 Connect mechanical ventilator to patient.
07.05 Monitor patient physiology and make appropriate ventilator changes if necessary.
07.06 Address needs of the patient, including psychological, physical, and emotional.
07.07 Recognize indications for adjunctive airway maneuvers.
07.08 Determine patient's readiness for weaning.
07.09 Wean patient from ventilator.
07.10 Monitor patient's return to normal physiology; reventilate if necessary.

08.0 PERFORM INFECTION-CONTROL TECHNIQUES--The student will be able to:

08.01 Apply infection-control techniques following Centers for Disease Control (CDC) guidelines and taking universal precautions.
08.02 Don isolation cap, mask, gown, and gloves.
08.03 Perform prescribed therapy in an isolation setting.
08.04 Discard/double-bag used equipment and arrange for proper sterilization or disposal.
08.05 List the types of isolation with the required apparel/procedures, etc.
08.06 Chart activity related to isolation setting.

09.0 PERFORM CLEANING, STERILIZATION, AND GENERAL MAINTENANCE OF EQUIPMENT--The student will be able to:

09.01 Clean used equipment; wrap and sterilize using appropriate method (gas, temperature, and chemical).
09.02 Operate sterilizer, if applicable, or send to central service.
09.03 Store returned sterilized equipment safely, being mindful of sterilization expiration dates.
09.04 Perform routine maintenance according to manufacturer's directions and maintain appropriate maintenance records.

10.0 INSTRUCT PATIENT IN CARDIORESPIRATORY REHABILITATION AND HOME CARE--The student will be able to:

10.01 Instruct patient and family in equipment cleaning, care, and use.
10.02 Instruct patient and family in proper breathing/coughing exercises.
10.03 Instruct patient and family in physical exercise and in activities of daily living.
10.04 Instruct patient and family about the disease state.
10.05 Instruct patient and family about when to call the physician.
10.06 Instruct patient and family in how to recognize deterioration in physical status.
10.07 Instruct patient and family in proper drug dosage and administration techniques and importance of the therapy.
10.08 Instruct patient and family in proper therapy techniques.

11.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

11.01 Conduct a job search.
11.02 Secure information about a job.
11.03 Identify documents that may be required when applying for a job.
11.04 Complete a job application.
11.05 Demonstrate competence in job interview techniques.
11.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
11.07 Identify acceptable work habits.
11.08 Demonstrate knowledge of how to make job changes appropriately.
11.09 Demonstrate acceptable employee health habits.
11.10 Identify state licensure and continuing education requirements.

12.0 ADMINISTER CARDIORESPIRATORY DRUGS--The student will be able to:

12.01 Demonstrate knowledge of drug classifications, actions and uses, route of administration and usual adult doses, mathematics needed to calculate divided or children's dosage, contraindications, drug interactions, adverse reactions, how supplied, mixing instructions, storage, and laboratory test interferences.
12.02 Recognize the critical importance of this activity and follow directions.
12.03 Verify physician's orders.
12.04 Prepare medication for administration.

12.05 Identify patient; introduce self.
12.06 Administer drug.
12.07 Document administering of drug in all appropriate records.
12.08 Recognize the symptoms of drug idiosyncracies.
12.09 Identify adverse drug reactions and take appropriate action.
12.10 Recognize anaphylactic shock.

13.0 ASSIST A PHYSICIAN PERFORMING SPECIAL PROCEDURES, AS APPROPRIATE--The student will be able to:

13.01 Assist the physician performing a bronchoscopy, as appropriate.
13.02 Assist the physician performing a thoracentesis, as appropriate.
13.03 Assist the physician performing a tracheostomy, as appropriate.
13.04 Assist the physician performing insertion of chest tubes, as appropriate.
13.05 Assist the physician performing invasive monitoring, as appropriate.

14.0 DEMONSTRATE KNOWLEDGE OF IMMUNE-DEFICIENCY DISEASES, INCLUDING AIDS--The student will be able to:

14.01 Distinguish between fact and fallacy about the transmission and treatment of immune-deficiency diseases, including HIV infection.
14.02 Identify community resources and services available to the victims of immune-deficiency diseases.
14.03 Identify at-risk behaviors that promote the spread of AIDS and the public education necessary to combat the spread of immune-deficiency diseases.
14.04 Apply infection-control techniques designed to prevent the spread of diseases to patients, following Centers for Disease Control (CDC) guidelines.
14.05 Demonstrate knowledge of the legal aspects of AIDS.

FACILITIES

Design Criteria

Listed below are the minimum, normal, and maximum space requirements for new instructional programs in respiratory therapy. Space requirements are the same for new respiratory therapy technician programs.

DEDICATED SPACE
(in square feet)

	Per Student			Total (Based on 15 students)		
	Min.	Normal	Max.	Min.	Normal	Max.
Classroom				500	525	550
Laboratory	72	80	88			
Student Lockers				170	180	190

The Joint Review Committee Essential III,B,1

The Joint Review Committee for Respiratory Therapy Education advocates the establishment of a laboratory facility for the development of student skills in equipment and procedural modalities prior to their interfacing with patients in the clinical setting.

The respiratory care laboratory should be a distinct area, used and equipped primarily to support the respiratory care curriculum and the number of students enrolled. It should be available to students not only for formal laboratory instruction, but also for independent practice and remediation.

Safety

The Florida State Board of Education has established rules for the operation of public schools. Chapter 6A-2 in *Educational Facilities*: *Public Schools and Community Colleges* contains the standards for existing educational facilities, with regard to such topics as electrical equipment, flammable materials, ventilation, fire safety, storage, and illumination.

Although no specific safety regulations have been manufactured for Respiratory Therapy and Respiratory Therapy Technician programs, it is recommended that strict adherence to the general standards as outlined in these rules be practiced (e.g., firstaid kits in classrooms, adequate fire extinguishers, fire-evaluation plan).

Suggested Equipment and Supplies

The following list for respiratory care laboratory facilities is designed to assist schools in developing or upgrading teaching resources. Equipment is grouped into categories and listed alphabetically relative to areas of competence commonly described for respiratory care practitioners. Basic equipment and supplies are those that are considered essential and should be available exclusively for student use as adjuncts to unit content and program objectives. Some items may be borrowed or rented when appropriate, but it is recommended that they be available to students on a continuous basis.

Facility recommendations are limited to those categories in which the physical design of the laboratory is a consideration in demonstrating or evaluating specific clinical competency. Brand names of manufacturers are specified only when necessary to clarify equipment description or category; otherwise, generic descriptions are employed. Quantity of equipment is not delineated.

Variations in student enrollment and laboratory schedules, type of utilization, and lesson plans will dictate material.

This list was developed by the Joint Review Committee for Respiratory Therapy Education, as a description of current standards for Essential III,B,1.

CATEGORY	BASIC EQUIPMENT
AEROSOL GENERATORS/ NEBULIZERS	Self-propelled cartridge type Spinhaler (dry powder aerosol) Small-volume medication nebulizers for spontaneous breathing squeeze bulb type pneumatic powered Small-volume medication nebulizers for ventilatory circuits side arm slipstream (baffled) mainstream Large-volume pneumatic nebulizers for jet type nebulizers ventilator mainstream all-purpose with air entrainment high-output large reservoir nebulizer with recirculating system for enclosures heating elements

- Hydronamic (Babbington) nebulizers
  - all-purpose type
  - high-flow type of enclosure

- Electrical nebulizers
  - ultrasonic with accessories
  - centrifugal (spinning disc type)

AIRWAYS/AIRWAY ADJUNCTS AND ACCESSORIES

- Assorted adult masks

- Assorted pediatric/neonatal masks

- Oropharyngeal airways
  - Berman type
  - Guedel type

- Nasopharyngeal airways

- S-tubes (pediatric/adult)

- Esophageal obturator airway

- Assorted endotracheal tubes (pediatric/adult)
  - uncuffed
  - cuffed
    - high pressure
    - low pressure
    - pressure regulated

- Adult and pediatric laryngoscopes with assorted blades

- Magill forceps

- Stylet

- Bite block

- Assorted tracheostomy tubes (pediatric/adult)
  - uncuffed
  - cuffed
    - high pressure
    - low pressure
    - pressure regulated
  - tubes with inner cannulae

- Assorted adapters

- Cuff pressure manometer

- CPAP nasal prongs

ANALOGS, LUNG	Simple test lungs
	Mechanical test lung with variable resistance and compliance
ANALYTICAL EQUIPMENT LABORATORY FOR:	
TIME	Stopwatches, fast sweep
LENGTH	Meter, centimeter rules
VOLUME	Water-sealed bell spirometer
	Calibrated super syringe
PRESSURE	Assorted aneroid (diaphragm) or Bourdon gauges in different units and sensitivities
	Simple U-tube manometers, water or mercurial
ANALYTICAL EQUIPMENT LABORATORY FOR:	
HUMIDITY	Sling psychometer
FLOW	Calibrated laboratory type flowmeter
MASS	Mechanical laboratory balance
TEMPERATURE	Laboratory grade mercurial thermometers, Celsius and Fahrenheit
BLOOD	Blood gas analyzer with pH, PCO_2, and PO_2 electrodes
	Blood gas analyzer accessories and supplies
	Hematocrit centrifuge
BREATHING ADJUNCTS	Incentive spirometers volumetric flow-dependent
	Rebreathing systems
	Expiratory resistance (retard) systems
CALIBRATING, REPAIR, AND MAINTENANCE EQUIPMENT	Tool Kit
	Voltmeter

	Basic required analytical equipment (see previous section)
COMPRESSED GASES	Assorted cylinder sizes (E, G, or H minimum) air oxygen oxygen/helium mixtures oxygen/carbon dioxide mixtures Air compressors low pressure (10-20 psig) for nebulizers high pressure (50 psig) with reservoir for ventilators Bulk delivery system outlets and connectors DISS representative quick-connect systems High-pressure delivery tubing, male/female combinations for air and oxygen
CPAP APPARATUS	Representative flow and threshold resistor systems and circuitry for "in-house" CPAP systems (adult and pediatric)
DRUGS/DILUENTS	Representative multiple dose vials and unit dose dispensers of commonly employed aerosol agents and diluents, including micronephrin vaponephrin bronchosol mucomyst saline, 0.5%, 0.9%, and 2% sodium bicarbonate, 2%, 5%, and 7.5% sodium cromolyn spinhaler
ELECTROCARDIOGRAPHIC EQUIPMENT	Single-channel 12-lead electrocardiograph Cardiac monitor with oscilloscope display, cardiotachometer, and alarms
FLOWMETERS, CLINICAL	Pressure-compensated Thorpe tubes Uncompensated Thorpe tubes Bourdon gauges Kinetic flow tubes
GAS ANALYZERS:	
OXYGEN	Representative models electrochemical

	Clark electrode Galvanic (fuel) cell paramagnetic thermoconductive
	Blood gas analyzer
CARBON DIOXIDE	Chemical/volumetric
	Blood gas analyzer
HUMIDIFIERS	Representative types blow-over simple bubble diffusing/bubble
	Humidifier heaters immersion type hot plate wrap-around
LABORATORY EQUIPMENT	Assorted beakers, flasks, graduated cylinders
	Hot plate
MANIKINS	Infant intubation manikin Adult intubation manikin Infant resuscitation manikin Recording adult resuscitation manikin Arterial puncture arm
MODELS, ANATOMICAL	Segmental lung model Upper airway model Thorax model Larynx model Heart model Skeleton
MISCELLANEOUS	X-ray viewbox Hospital bed
NURSING CARE EQUIPMENT	Packaged sterile gloves Assorted tapes Sphygmomanometers Stethoscopes Assorted syringes Gauze pads Tongue depressors Flashlight Chest drainage system (three-bottle)

OXYGEN THERAPY EQUIPMENT	Assorted simple oxygen therapy (aerosol) modalities (adult *and* pediatric where appropriate) cannulae catheters simple masks aerosol masks partial rebreathing masks nonrebreathing masks venturi masks face tents Brigg's adapters (T-tubes) tracheostomy masks
	Oxygen/environmental enclosures Oxyhood isolette pediatric tent adult oxygen tent
	Oxygen blender/accessories
PHYSIOLOGICAL MONITORS	
EXPIRED VOLUME	Bellows type collecting spirometer with alarms
RESPIRATIONS	Apnea monitor
BLOOD PRESSURE	Sphygmomanometer mercurial aneroid
	CVP fluid pressure manometer
AIRWAY PRESSURE	Pressure disconnect alarm
GAS ANALYSIS	See gas analyzer section
PULMONARY FUNCTION	Water-sealed bell spirometer with variable speed kymograph for lung volumes and capacities, forced vital capacities, and MVV
RESUSCITATION DEVICES	Adult AMBU Hope Laerdal PMR Airbird Selected reservoir attachments Pediatric/Neonatal Laerdal Hope I, II, Pediatric

	Samson neonatal resuscitator Cardiff (Penlon) resuscitator AMBU baby resuscitator
	Gas-powered resuscitators
STERILIZATION, CLEANING, DISINFECTION (INFECTION CONTROL)	Cleaning area, separate from equipment storage, should include: sinks for equipment cleaning liquid disinfectant immersion bucket equipment dryer sterilizer autoclave or ETO biological surveillance (indicators) system for sterilizer(s) representative disinfectant and sterilizing solutions appropriate packaging materials, with log and label system
SUCTION (ASPIRATION)	Portable or piped vacuum Assorted suction catheters/kits, pediatric and adult Bulb suction DeLee mucus trap Yankauer (tonsil) suction tip Sterile aspirant collectors
VENTILATORS	
PRESSURE CYCLED	Minimum of two different types, one each rotary alignment valve sliding alignment valve
	Complete accessories for each ventilator for modification to continuous ventilatory support (to include): FI02 control BTPS humidification HEPA filtration minimum deadspace, nonrebreathing circuits expired gas monitoring disconnect alarm system
	Pneumatic and electrically powered pressure-cycled ventilators
	Fluidics-pressure-cycled ventilator
	Pressure-cycled ventilator with leak compensation mechanism

VOLUME-PRESENT	Representative volume-cycled ventilators incorporating or modifiable to IMV PEEP Selection of volume-cycled ventilators representing the following drive mechanisms or options single circuit/double circuit piston powered compressor/bellows powered fluidics controlled SIMV/CPAP capability pressure support
PEDIATRIC/NEONATAL	Representative pediatric/neonatal ventilators incorporating or modifiable to IMV PEEP CPAP Appropriate pediatric ventilatory circulatory and accessories, including alarms Pediatric ventilator circuit and necessary design components for modifying adult volume or pressure ventilators for use with infants Selection of pediatric/neonatal ventilators representing the following design characteristics, cycling mechanisms, or options: continuous flow time cycling pressure cycling pressure limiting (pressure plateau) reverse I:E ratio pneumatically or electrically powered pneumatically or electrically controlled fluidically controlled

Student Learning Guide

A sample student learning guide is provided in the Appendix as an example for you to use when developing or adapting a set of learning guides or modules. This sample guide presents the major components of a competency-based student learning guide. For further information see the *Florida Vocational Program Implementation Guide*.

Student Organization Participation

The vocational student organization associated with the respiratory therapy and respiratory therapy technician programs is Health Occupations Students of America, Inc., (HOSA) for students. This organization is cocurricular and is considered an integral part of the instructional program. Student membership in the Florida Society for Respiratory Care and the American Association for Respiratory Care is encouraged.

Refer to the *Florida Vocational Program Implementation Guide* for more information.

Sample Student Code of Ethics Statement*

Because ethics is of considerable importance in the field of respiratory therapy, you may wish to include a Student Code of Ethics statement like the one below in your student materials.

STUDENT CODE OF ETHICS

As Allied Health Professionals engaged in the performance of Respiratory Therapy, we must individually and collectively strive to maintain the highest ethical standards.

The students in the Respiratory Therapy program at ______________________ College shall:

- practice medically acceptable methods of treatment, and shall not endeavor to extend beyond their competence nor the authority invested to them by the physician.

- continually strive to increase and improve their knowledge and skills. All services shall be provided with respect for the dignity of the patient, unrestricted by considerations of social or economic status, personal attributes, or the nature of health problems.

- be responsible for the competent and efficient performance of their assigned duties and shall expose incompetence and illegal or unethical conduct to the proper authorities.

- hold in strict confidence all privileged information concerning the patient and refer all inquiries to the physician in charge of the patient's medical care.

- not accept gratuities in the form of bribes or tips for preferential consideration of the patient or to supplement income. The students must carefully guard against conflict of professional interest.
- be familiar and comply with existing state and federal laws governing the practice of respiratory therapy.
- serve as an example by abstaining from tobacco use.

*Adopted from "Code of Ethics" and "Role Model Statement," American Association for Respiratory Care, 1988.

PROFESSIONAL CONSIDERATIONS

Teacher Certification

According to the Joint Review Committee for Respiratory Therapy Education, "personnel shall be qualified by education and experience to fulfill their assigned responsibilities. . . ."

Professional Organizations and Support Services

Advisory Council on Respiratory Care
Department of Professional Regulation
Northwood Center
1940 North Monroe
Tallahassee, FL 32399-0750
(904) 487-3372

American Association for Respiratory Care
11030 Ables Lane
Dallas, TX 75229
(214) 243-AARC

Committee on Allied Health Education
and Accreditation
American Medical Association
535 North Dearborn Street
Chicago, IL 60610
(312) 645-4627

Florida Society for Respiratory Care
P.O. Box 65
Hobe Sound, FL 33475

The Joint Review Committee
for Respiratory Therapy Education
1701 W. Euless Boulevard, Suite 200
Euless, TX 76040
(817) 283-2835

National Board for Respiratory Care
Executive Office
8310 Nieman Road
Lenexa, KS 66214
(913) 599-4200

INSTRUCTIONAL RESOURCES

In this section are listed a variety of resources in the area of respiratory therapy care. Included are publishers of printed materials, software distributors, instructor-developed materials, journals and print materials recommended by the National Board of Respiratory Care, and additional materials recommended by instructors. You are encouraged to request catalogs from publishers, professional organizations, and manufacturers so that you are aware of the most current materials available.

Test-Item Bank

The Division of Vocational, Adult, and Community Education (DVACE) has coordinated the development of multiple-choice test items for selected vocational job-preparatory programs. Test items are based on student performance standards for the specific programs. No such test-item bank has yet been developed by the DVACE for the RT or RTT programs. Contact the Bureau of Vocational Program and Staff Development at (904) 488-1839 or SUNCOM 278-1839 for information on future development projects.

A list of test-item bank sources has been included in Appendix D of the accompanying document, the *Florida Vocational Program Implementation Guide*.

Sources of Print Materials

The following offer instructional materials in print media. They may also offer other media.

Academic Press
465 South Lincoln Drive
Troy, MD 63379

American Lung Association
1740 Broadway
New York, NY 10019

Bird Products Corporation
4371 Latham Street #202
Riverside, CA 92501

The Brady Company
Prentice Hall Publishers
Routes 450 and 197
Bowie, MD 20714

Ciba Corning Diagnostics
63 North Street
Medfield, MA 02052

Warren Collins, Inc.
220 Wood Road
Braintree, MA 03284

F. A. Davis Company
1915 Arch Street
Philadelphia, PA 19103

Delmar Publishers
2 Computer Drive West
Albany, NY 12212

J. B. Lippincott Company
East Washington Square
Philadephia, PA 19105

Little, Brown and Company
200 West Street
Waltham, MA 02154

McGraw-Hill
P.O. Box 401
Highstown, NJ 08520

Michigan Instruments
6300 - 28th Street SE
Grand Rapids, MI 49506

C. V. Mosby Company & Mosby/Multi-Media
11830 Westline Industrial Drive
St. Louis, MO 63146

Puritan-Bennett Corporation
P.O. Box 25905
Overland Park, KS 66225-5905

Reston Publishing Company
200 Old Tappan Road
Old Tappan, NJ 07675

W. B. Saunders Company
Curtis Center - Ind. Square West
Philadelphia, PA 19106-3399

Siemens Life Support Systems
2360 North Palmer Drive
Schaumberg, IL 60173-3887

Springhouse Publishing Company
1111 Bethlehem Pike
Springhouse, PA 19477

The Williams & Wilkens Company
P.O. Box 1496
Baltimore, MD 21203

Yearbook Medical Publishers
200 North LaSalle Street
Chicago, IL 60601-1080

Sources of Software

The following offer instructional materials in computer software media. Contact the suppliers as to the hardware requirements to operate their materials. They may also offer other media.

Medical Software of Idaho
5311 Onaga Place
Boise, ID 83705
(208) 386-3666

Medi-Sim, Inc.
660 South 4th Street
P.O. Box 13267
Edwardsville, KS 66113
(913) 441-2881

SO SOFTware
406 South Evergreen Avenue
Marshfield, WI 54449
(715) 384-8927

Sources of Materials Developed by Instructors

David Yonutas
Coordinator, Respiratory Therapy Program
Santa Fe Community College
3000 NW 83rd Street
Gainesville, FL 32602
(904) 395-5706; SUNCOM 650-5706

Modules to supplement lectures

Carol Miller
Chair, Cardiopulmonary Sciences
Miami Dade Community College
950 NW 20th Street
Miami, FL 33127
(305) 347-4031; SUNCOM 477-4031

Videotaped scenarios (examples and nonexamples) of selected clinical procedures

Student Learning Modules

Clinical Check-offs

Jerald L. Basel
Director, Nontraditional Program in
Respiratory Care
Galveston College/University of Texas
School of Allied Health Science (J-28)
University of Texas Medical Branch
Galveston, TX 77550-2782
(409) 761-3042

Self-instructional modules; program is self-paced.

Journals Recommended by the National Board for Respiratory Care

Journal of the American Medical Association

New England Journal of Medicine

American Review of Respiratory Disease

Anesthesia and Analgesia

Chest

Critical Care Medicine

Respiratory Care

Heart and Lung

Study Resources List Developed by the National Board for Respiratory Care

The reference list provided here is not intended to be all-inclusive. Rather, it is designed to familiarize you with some textbooks and articles for respiratory therapists and to give you a starting point from which to begin your studies. The references are divided according to the major sections of the RRT Form II Written Self Assessment Examination content outline (matrix).

The inclusion of books, periodicals, and other materials in this list does not constitute an endorsement or recommendation for such materials by the NBRC, AMP, or any of its officers, representatives, or sponsors. The materials presented herein are for guidance only and do not represent all the materials and books available for study. Examination questions are not necessarily referenced in any of the publications listed.

I. SELECT, REVIEW, OBTAIN, AND INTERPRET DATA.

A. Review patient records and recommend diagnostic procedures to obtain additional data.

1. Burton, G. G. and Hodgkin, J. E. *Respiratory Care: A Guide to Clinical Practice*, 2nd ed., Chs. 10, 12, 13, 14, 19, and 36 and Appendix A. Philadelphia: J. B. Lippincott Co., 1984.

2. Burnside, J. *Adam's Physical Diagnosis*, 15th ed., Chs. 1, 2, and 4. Baltimore: The Williams & Wilkens Co., 1974.

3. *The Nurse's Reference Library Assessment*, Ch. 9. Pennsylvania: Springhouse Publishing Co. Inc., 1982.

B. Collect and evaluate additional pertinent clinical information.

1. Burton, G. G. and Hodgkin, J. E. *Respiratory Care: A Guide to Clinical Practice*, 2nd ed., Chs. 13, 14, and 39 and Appendix A. Philadelphia: J. B. Lippincott Co., 1984.

2. Rau, Jr., J. L. and Pearce, D. J. *Understanding Chest Radiographs*. Denver: Multimedia Publishers, 1984.

C. Perform diagnostic procedures, interpret results, and assist in care plan.

1. Clausen, J. L. and Zarins, L. P. *Pulmonary Function Testing - Guidelines and Controversies*, 2nd ed., Chs. 7, 20, and 21. New York: Academic Press, Inc., 1984.

2. Comroe, J. H., et al. *The Lung: Clinical Physiology and Pulmonary Function Testing*, 2nd ed., Chs. 6 and 7. Chicago: Yearbook Medical Publishers, 1962.

3. Ruppel, G. *Manual of Pulmonary Function Testing*, 4th ed., Chs. 3 and 6. St. Louis: C. V. Mosby Co., 1986.

II. SELECT, ASSEMBLE, AND CHECK EQUIPMENT FOR PROPER FUNCTION AND OPERATION.

A. Select and obtain equipment appropriate to the respiratory care plan.

1. Burton, G. G., Gee, G. N., and Hodgkin, J. E. *Respiratory Care: A Guide to Clinical Practice*, Chs. 15, 17, 18, 21, 24, 37, and 38. Philadelphia: J. B. Lippincott Co., 1977.

2. McPherson, S. P. *Respiratory Therapy Equipment*, 3rd ed., Chs. 2-14. St. Louis: C. V. Mosby Co., 1985.

3. Spearman, C. B., Sheldon, R. L., and Egan, D. F. *Egan's Fundamentals of Respiratory Therapy*, 4th ed., Chs. 10, 12, 13, and 14. St. Louis: C. V. Mosby Co., 1982.

B. Assemble, check for proper function, and identify malfunctions of equipment.

1. Blodgett, D. *Manual of Respiratory Care Procedures*, Chs. 1, 2, 3, 5, 6, and 7. Philadelphia: J. B. Lippincott Co., 1980.

2. Hunsinger, D. L.. *Respiratory Technology: Procedure and Equipment Manual*, Units 3-6, and 9. Reston, Virginia: Reston Publishing Co., 1980.

3. McPherson, S. P. *Respiratory Therapy Equipment*, 3rd ed., Chs. 2-14. St. Louis: C. V. Mosby Co., 1985.

C. Correct malfunctions of equipment and perform quality-control procedures.

1. Burton, G. G. and Hodgkin, J. E. *Respiratory Care: A Guide to Clinical Practice*, 2nd ed., Ch. 19. Philadelphia: J. B. Lippincott Co., 1984.

2. Hunsinger, D. L. *Respiratory Technology: Procedure and Equipment Manual*, Unit 8. Reston, Virginia: Reston Publishing Co., 1980.

3. Kacmarek, R. M., Dimas, S., and Mack, C. W. *Essentials of Respiratory Therapy*, Ch. 26. Chicago: Yearbook Medical Publishers, 1979.

III. INITIATE, CONDUCT, AND MODIFY PRESCRIBED THERAPEUTIC PROCEDURES.

A. Maintain airway and assure ventilation.

1. Demers, R. R. "Complications of Endotracheal Suctioning Procedures," *Respiratory Care*, 27 (1982), 453.

2. Shapiro, B. A., Harrison, R. A., and Trout, C. A. *Clinical Application of Respiratory Care*, 3rd ed., Chs. 15, 16, and 17. Chicago: Yearbook Medical Publishers, 1985.

3. Stauffer, J. L. and Silvestri, R. C. "Complications of Endotracheal Intubation, Tracheostomy, and Artificial Airways," *Respiratory Care*, 27 (1982), 417.

B. Evaluate and monitor patient's response to respiratory care.

1. Burton, G. G., Gee, G. N., and Hodgkin, J. E. *Respiratory Care: A Guide to Clinical Practice*, 2nd ed., Chs. 23-26, and 37. Philadelphia: J. B. Lippincott Co., 1984.

2. Spearman, C. B., Sheldon, R. L., and Egan, D. F. *Egan's Fundamentals of Respiratory Therapy*, 4th ed., Ch. 13. St. Louis: C. V. Mosby Co., 1982.

3. Shapiro, B. A., Harrison, R. A., and Trout, C. A. *Clinical Application of Respiratory Care*, 3rd ed., Chs. 10 and 11. Chicago: Yearbook Medical Publishers, 1985.

C. Modify therapy/make recommendations based on patient response.

1. Burton, G. G., Gee, G. N., and Hodgkin, J. E. *Respiratory Care: A Guide to Clinical Practice*, 2nd ed., Chs. 17-18, 20-21, 24, 26, and 37. Philadelphia: J. B. Lippincott Co., 1984.

2. Spearman, C. B., Sheldon, R. L., and Egan, D. F. *Egan's Fundamentals of Respiratory Therapy*, 4th ed., Ch. 13. St. Louis: C. V. Mosby Co., 1982.

3. Shapiro, B. A., Harrison, R. A., and Trout, C. A. *Clinical Application of Respiratory Care*, 3rd ed., Chs. 6, 9, 12, and 14-16. Chicago: Yearbook Medical Publishers, 1985.

D. Perform emergency procedures.

1. Morrison, M. L. *Respiratory Intensive Care Nursing*, 2nd ed., Ch. 16. Boston: Little Brown, 1979.

2. "Standards and Guidelines for Cardiopulmonary Resuscitation (CPR) and Emergency Cardiac Care (ECC)," *JAMA* 255 (June 6, 1984), 21.

3. Burton, G. G., Gee, G. N., and Hodgkin, J. E. *Respiratory Care: A Guide to Clinical Practice*, 2nd ed., Ch. 38. Philadelphia: J. B. Lippincott Co., 1984.

E. Assist physician with special procedures and conduct pulmonary rehabilitation and home care.

1. Bell, C. W., et al. *Home Care and Rehabilitation in Respiratory Medicine*. Philadelphia: J. B. Lippincott Co., 1984.

2. Petty, T. L. *Intensive and Rehabilitative Respiratory Care*, 3rd ed., Lea and Febiger, 1982.

3. Burton, G. G., Gee, G. N., and Hodgkin, J. E. *Respiratory Care: A Guide to Clinical Practice*, 2nd ed., Chs. 17, 18, 20, 21, 24, 26, 27, and 37. Philadelphia: J. B. Lippincott Co., 1984.

Instructor-Recommended Materials

AUTHOR	TITLE	PUBLISHER	YEAR
Assman, David C.	*Clinical Simulations for Respiratory Care*	Yearbook Medical	1979
Avery, Mary Ellen	*The Lung and Its Disorders*	W. B. Saunders	1981
Barnes, Thomas A.	*Brady's Programmed Introduction to Respiratory Care*	R. J. Brady Co.	1980

AUTHOR	TITLE	PUBLISHER	YEAR
Blodgett, Diane	*Manual of Pediatric Respiratory Care Procedures*	J. B. Lippincott	1982
Bonner, John T.	*Respiratory Intensive Care of the Adult*	C. V. Mosby	1985
Cherniack, Reuben M.	*Respiration in Health and Disease*	Saunders	1983
Daily, Elaine K.	*Techniques in Bedside Hemodynamic Monitoring*	C. V. Mosby	1985
Des Jardins, Terry R.	*Clinical Manifestations of Respiratory Disorders*	Yearbook Medical	1984
Dupuis, Yvon G.	*Ventilators: Theory and Clinical Applications*	C. V. Mosby	1986
Egan, Donald F.	*Egan's Fundamentals of Respiratory Therapy*	C. V. Mosby	1982
Farzan, Sattar	*A Concise Handbook of Respiratory Diseases*	Reston Publishing	1985
Fink, James B.	*Respiratory Therapist as Manager*	Yearbook Medical	1986
Fishman, Noel H.	*Thoracic Drainage: A Manual of Procedure*	Yearbook Medical	1983

AUTHOR	TITLE	PUBLISHER	YEAR
Heitzman, E. Robert	*The Lung: Radiologic-Pathologic Correlation*	C. V. Mosby	1984
Hollinger, M. A.	*Respiratory Pharmacology and Toxicology*	W. B. Saunders	1985
Levitzky, Michael G.	*Pulmonary Physiology*	McGraw-Hill	1982
Mathewson, Hugh S.	*Pharmacology for Respiratory Therapists*	C. V. Mosby	1981
McPherson, Steven P.	*Respiratory Therapy Equipment*	C. V. Mosby	1985
Morgan, W. K. C.	*Occupational Lung Diseases*	W. B. Saunders	1984
Murray, John F.	*The Normal Lung: the Basis for Diagnosis*	W. B. Saunders	1986
Rau, Joseph L.	*Respiratory Therapy Pharmacology*	Yearbook Medical	1984
Rau, Joseph L.	*Understanding Chest Radiographs*	Mosby Multimedia Publishers	1984
Ruppel, Gregg	*Manual of Pulmonary Function Testing*	C. V. Mosby	1982
Sexton, D. L.	*Chronic Obstructive Pulmonary Disease*	C. V. Mosby	1981
Shapiro, Barry A.	*Clinical Application of Blood Gases*	Yearbook Medical	1982

AUTHOR	TITLE	PUBLISHER	YEAR
Slonim, N. Balfour	*Respiratory Physiology*	C. V. Mosby	1981
Smith, Robert Moors	*Anesthesia for Infants and Children*	C. V. Mosby	1980
Stringer, L. W.	*Emergency Treatment of Acute Respiratory Disease*	Prentice-Hall	1981
Tisi, Gennard M.	*Pulmonary Physiology in Clinical Medicine*	C. V. Mosby	1980
Wade, Jacqueline F.	*Comprehensive Respiratory Care: Physiology and Technique*	C. V. Mosby	1982
Weber, Karl T. and Janicki, Joseph S.	*Cardiopulmonary Exercise Testing: Physiologic Principles and Clinical Applications*	W. B. Saunders	1986
Weinberger, Steven E.	*Principles of Pulmonary Medicine*	W. B. Saunders	1986
West, John B.	*Respiratory Physiology–The Essentials*	Williams & Wilkens	1985
Whitcomb, Michael E.	*The Lung: Normal and Diseased*	C. V. Mosby	1982
Wilkins, Robert L.	*Clinical Assessment in Respiratory Care*	C. V. Mosby	1985
Williams, M. Henry	*Essentials of Pulmonary Medicine*	W. B. Saunders	1982

AUTHOR	TITLE	PUBLISHER	YEAR
Witkowski, Arthur S.	*Pulmonary Assessment: A Clinical Guide*	J. B. Lippincott	1982

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If you need (1) information about copyright; (2) a list of instructors teaching respiratory therapy programs in Florida; (3) journal articles or project reports on specific topics; (4) curriculum and instructional materials; and (5) information on current trends, issues, and research, please contact the Florida Educational Information Service (FEIS), Center for Instructional Development and Services, College of Education, Florida State University, 2003 Apalachee Parkway, Tallahassee, Florida 32301, (904) 487-2054. FEIS will tailor its service to meet your needs on information concerning resource materials.

APPENDIX

Sample Student Learning Guide
for
Respiratory Therapy*

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*Appreciation is expressed to David Yonutas, Santa Fe Community College, for providing instructional materials from which the following Learning Guide has been adapted.

STUDENT LEARNING GUIDE

As mentioned in the Instructional Approach of the *Florida Vocational Education Program Implementation Guide,* competency-based vocational instruction (CBVI) is the most appropriate instructional approach to teaching students to become competent workers. In order to implement CBVI effectively and efficiently, you and the students should have access to competency-based instructional materials, such as student guides or modules.

The following components are often included in a student learning guide:

The **introduction,** which includes the intended outcome, the SPS for which the guide is developed, and an introduction to the guide stating why this topic is important to study and what this guide is about (other information, such as the relationship between this guide and other guides, can be included on this sheet also).

The **objectives,** which include both knowledge and performance objectives if the SPS calls for hands-on performance, but only knowledge objectives if the SPS requires knowledge-oriented competencies.

The **resources,** which include instructional materials the student should use to study and tools and supplies students should have access to in order to complete this guide.

The **learning activities,** which include a list of steps students should take in order to master the objectives.

The **self-check,** which consists of questions designed to help students review what they have studied.

The **activity sheet,** which is designed to help students practice hands-on tasks for performance objectives. (If the SPS does not require hands-on activity, this sheet is not included in the learning guide.)

The **written test,** which is to measure the student's achievement on the knowledge objectives.

The **performance test,** which is designed to be used by the evaluator/instructor to assess the student's level of achievement on the performance objectives.

The student learning guide may consist of two or more sets of the above components if the objectives need to be divided into two or more groups. Whatever format you use for the student learning guide, these components should be included in order to incorporate instructional events such as:

1. gaining attention
2. stating objectives
3. recalling prerequisites
4. providing instructional stimulus
5. providing learning guidance
6. eliciting performance

7. providing feedback
8. assessing performance
9. enhancing retention and transfer

STUDENT LEARNING GUIDE

Programs: Respiratory Therapy and Respiratory Therapy Technician

Intended Outcome: 02. Select, assemble, and check equipment for proper function, operation, cleanliness, and calibration.

Student Performance Standard: 02.04. Clean and disinfect used equipment; wrap and sterilize using appropriate method (gas, temperature, and chemical) and following Centers for Disease Control (CDC) guidelines.

Introduction: In this student learning guide, you will learn about the importance of sterilizing and disinfecting respiratory care equipment, the physical and chemical methods used, and the advantages and disadvantages of these methods.

OBJECTIVES

Knowledge Objectives

At the end of this student learning guide, the student will be able to:

- identify definitions for key terms, such as sterilization, disinfection, and antisepsis
- identify the parameters of adequate sterilization by steam autoclaving
- identify several methods used for sterilizing equipment
- select the appropriate method for disinfecting respiratory therapy equipment, given a likely clinical scenario
- identify the disadvantages of using activated glutaraldehydes as sterilization agents
- identify when indicator tape is used
- identify the chemical result, and why ethylene oxide should not be used on gamma-irradiated equipment
- identify the parameters of adequate sterilization using ethylene oxide
- identify the agent(s) recommended by the AARC for cleaning respiratory therapy equipment in the home
- determine (from drawings of a biological indicator test) whether or not the run is sterile or nonsterile

NOTE: These are supporting objectives for the targeted task.

This student learning guide does not include a performance objective.

LIST OF RESOURCES

Instruction Sheets (attached): *Microbiology for the Respiratory Care Practitioner*

Optional:

Hoffman, David. *Microbiology for Respiratory Therapy: A Review of Microbial Growth and Cross Contamination*. Dallas: The American Association for Respiratory Therapy, 1978.

Jones, Judy A. *Respiratory Therapy Assistant*. Austin: The University of Texas, 1983.

LEARNING ACTIVITIES

LEARNING ACTIVITIES	RESOURCES
1. Read the attached instruction sheets, *Microbiology for the Respiratory Care Practitioner*.	1. Attached Instruction Sheets
a. Read optional background material, if interested.	a. Hoffman, pp. 11-13, 27-31, 41-44 b. Jones, pp. 12-14, 18-20
2. Check yourself on the objectives by taking the Self-Check (attached).	2. Self-Check is attached.
3. Check your answers with the Self-Check Answer Key.	3. Answer Key is included in this student learning guide.
4. Review instruction sheets, and read background material, if necessary. Also, consult your instructor.	4. See above.
5. Request Student Learning Guide Knowledge Test from your instructor.	5. Instructor

RET 2009

Microbiology for Respiratory Care Practitioners

Instructor: David N. Yonutas, M.S., R.R.T.

RET 2009
Microbiology for the Respiratory Care Practitioner
Module #7

Sterilization and Disinfection Agents

The knowledge that microorganisms could cause havoc with organic materials occured long before microorganisms were even known to exist. Drying, salting, and acid-preservation of foods were methods directed at preventing food putrefaction. Embalming was practiced in ancient Eygpt in an attempt to preserve the remains of pharoahs, priests, and other important people, such as teachers. Sewage was treated with chlorinated lime (calcium hypochlorite) and carbolic acid (phenol) in order to deodorize garbage and sewage. This mixture also was thrown on mass graves in cemeteries (look what happened to Wolfgang Amadeus Mozart!). Later, Pasteur demonstrated that microorganisms were responsible for food spoilage and Lister would spray operating rooms with carbolic acid. Lister also suggested, to the horror of his medical colleagues, that they should wash their hands after performing autopsies before delivering babies.

Caveat: Other than in terms of improved immunizations, we are no more resistant to infections than our forefathers. Strict attention to infection control is what decreases mortality due to infections.

DEFINITIONS:

Sterile - The absence of viable forms of microorganisms (including endospores). There are no degrees of sterility. The process of sterilization includes physical and chemical methods (see below).

Disinfection - The destruction of most pathogenic organisms in the vegetative state. Disinfection is carried out on inanimate objects. Methods of disinfection include boiling, pasteurization, and chemical agents. Contrast disinfection with antisepsis.

Antisepsis - The process in which the destruction of pathogenic organisms is carried out on living tissue, such as skin and mucous membranes. Antiseptic agents include hexachlorophene, alcohols, halogens (iodine, iodophors), and surfactants (soaps).

(Please note that disinfectants and antiseptic agents are not required to kill spores. In fact, no disinfectants or antiseptics are sterilization agents. However, all sterilization methods (see below) disinfect.)

Sanitization - Reduction of microorganism populations to a safe level as judged by public health requirements.

Cidal - A suffix indicating the killing of an organism. Agents may be virocidal, bacteriocidal, fungacidal, or sporocidal. Any agent that is sporocidal will also kill viruses, bacteria, and fungi.

Static - A suffix indicating the prevention of growth or multiplication of the organism. Notice that a bacteriostatic agent does not kill the bacterium, it only inhibits its growth. Once the bacteriostatic agent is removed, the organism can grow and divide.

PHYSICAL METHODS OF STERILIZATION AND DISINFECTION

Important factors in heat sterilization and disinfection are that the longer the time an organism is exposed to a given temperature, the lower the temperature needs to be; similarly, the higher the temperature, the shorter the exposure time required to kill the organism. Two important terms are:

1. Thermal Death Point: temperature to sterilize a given amount of broth culture in 10 minutes. E. coli is 55 degrees, TB 60 degrees (pasteurizers).
2. Thermal Death Time: Amount of time necessary for the organism to die at a given temperature.

Dry Heat

Procedure: Used on powders, petroleum gauze dressings. Expose to 160 – 170 °C heat for two hours

Mode of action: Denaturation of proteins

Moist Heat

Procedure: Vegetative bacteria, yeasts, and molds are killed in 5-10 minutes at 80 °C. Spores require up to 5 hours at this temperature.

Mode of action: Hydration and coagulation of proteins (inactivation of enzymes) and changes in nucleic acids and cytoplasmic membrane. The hydrogen bonds broken by the heat are prevented from reforming by the water molecules.

Steam Autoclaving

Procedure: 15 psig for 20 minutes at 121 °C. If temperature is 134 °C at 30 psig, only requires 3 minutes.

Range of effectiveness: Bacteriocidal, virucidal, fungicidal, and sporocidal.

Mode of action: Same as for moist heat.

Application: Limited application in respiratory therapy. Cannot be used on all respiratory therapy equipment. In addition, never wrap materials in rubber sheeting since the steam will not penetrate.

Benefits: Once purchased, steam is inexpensive. Materials are wrapped before undergoing the sterilization process. The amount of material also determines the duration of the sterilization procedure.

The process of autoclaving is carefully monitored. See the last page of this module for information on the surveillance of sterilization methods and equipment.

Pasteurization

Procedure: Hot water bath for 20-30 minutes at 70-80 °C. Liquids are pasterurized in 30 min. at 62 °C and in 3-5 sec. at 74 °C.
Range of effectiveness: Kills all vegetativive forms but not spores.
Mode of action: Coagulation of proteins.
Benefits: Good application with respiratory therapy equipment. Care must be taken during assembly not to contaminate.

Filters

Used to insure pure gas delivery. Types include copper beads or mesh, membrane filters, and high-efficiency particulate air filters. Filtration is also the only way to purify nutrients that contain proteins and is required in the sterilization of human sera. These filters are made of unglazed porcelain, nitro-cellulose acetate (Millipore), and sintered (fritted?) glass. If the pore size is less than 0.22 µm, the filter will be effective in eliminating bacteria but not viruses. Whenever using a piece of nondisposable respiratory therapy equipment on different patients, the gas going to the patient must be filtered prior to using it. Most of these filters are disposable and are of the filter paper variety.

Gamma Ray

Procedure: Expose equipment to radiation emitted from radioactive isotopes such as cobalt.
Range of effectiveness: Kills vegetative and nonvegetative forms. HOWEVER THE PENETRATION POWER IS LIMITED.
Mode of action: May damage the DNA or form powerful oxidizers and reducers from the organism's intracellular water.
Benefits: Disposable RT equipment is often sterilized by this method. **Always check the packaging to see how the equipment was sterilized.** Never ethylene oxide any equipment that has been gamma irradiated. It will form ethylene chlorohydrin, a very toxic chemical.

Ultraviolet Irradiation

Procedure: Expose equipment to UV light (390 - 40 µm).
Range of effectiveness: Kills vegetative cells; it is absorbed by DNA at 260 µm which cross-links thymine molecules, preventing further replication or transcription. Note that bacterial endospores are extremely resistant to destruction by ultraviolet light. Ultraviolet radiation has inadequate penetration and isn't very effective unless used on surfaces or for decreasing bacterial populations in the air.

CHEMICAL METHODS OF STERILIZATION AND DISINFECTION

Factors that determine the success of disinfection or sterilization are:

1. concentration of the disinfectant
2. time during which the disinfectant is allowed to act
3. temperature of disinfection
4. number and types of organisms present
5. nature of material being disinfected

In general, most agents work by either disrupting the surface tension of the cell membranes (soaps, etc) or by disrupting the function of structural or enzymatic proteins.

Phenols (Lysol)

Procedure: 2-5% aqueous solution applied topically.
Range of effectiveness: Depending on the concentration, they may be bacteriocidal and tuberculocidal. They are not sporocidal or virucidal, if the virus has a naked capsid (non-enveloped).
Mode of action: Denatures proteins and membrane lipids.
Benefits: Active in the presence of organic matter and on surfaces long after application. (Hexacholorophene, a halogenated phenol, is only effective against gram positive organisms.) Problem with phenols is that they are absorbed by rubber and are irritating to mucous membranes.

Halogens (chlorine, hypochlorite, iodine and iodophors)

Procedure: Applied topically.
Range of effectiveness: Iodophors are iodine along with a surfactant (soap). Not used on respiratory therapy equipment. Hypochlorite (bleach) is an active oxidizer and is used in suction bottles, etc. in patients with AIDS.
Hazards: Iodine may cause tissue necrosis, leave stains, and cause allergic responses. Iodophors are nonstaining, nonallergenic, water soluble, and relatively nonirritating.

Halogenated phenols (hexachlorophene)

Problems: Ineffective against gram negative organisms. Once used in NICU's for washing premature and term infants. Resulted in CNS damage in term infants with skin abrasions and premature infants. However, outbreaks of Staphylococcus aureus followed hexachlorophene's removal from the NICUs and nurseries.

Acetic Acid

Procedure: 0.25% solution nebulized or soak for 10 minutes.
Range of effectiveness: Useful against gram negatives, especially Pseudomonas.
Benefits: Useful in the home care of small nebulizers used for aerosol therapy. Acetic acid is found in vinegar. Mixing vinegar and water makes an adequate disinfectant for the equipment. The equipment is first washed in warm, soapy water, rinsed, soaked in acetic acid, and then rinsed again.

Alcohols

Procedure: 50-95% concentration (optimal is 70%) of isopropyl and ethyl alcohol applied topically.

Range of effectiveness: Will kill gram positive and negative organinsms, enveloped viruses, and fungi. Will also kill tubercle bacilli. Spores have not been effected even after a twenty year submersion in EtOH.

Benefits: Can be used to wipe the surfaces of nonimmersible equipment. EtOH is used before arterial puncture to steady the hand of the therapist and calm the patient (actually it is used to wipe the skin of the patient, but I was just checking to see if you were reading). EtOH will not work in the presence of protein.

Surfactants (soap and quaternary ammonium compounds)

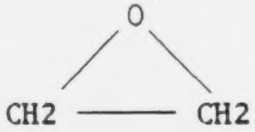
Procedure: "Quats" used at a concentration of 1:750.

Range of effectiveness: Useful against gram positive organisms and some gram negatives (NOT PSEUDOMONAS). No effect against tubercle bacilli, spores, or viruses (some enveloped viruses may be inactivated).

Mode of action: Has charged lipid and water soluble groups that are concentrated at the bacterial cell surface and alter the membrane's permeability to nutrients.

Problems: Pseudomonas can actually thrive in "quats". Though bland and nontoxic to the skin, organic matter interfers with "quats" action and they are readily neutralized by other soaps and anionic detergents (as found in laundry powders).

Ethylene Oxide (ETO) - CH2-O-CH2



Procedure: 49-57 °C at greater than 50% humidity with a gas concentration of 450-1500 mg/L for 3-4 hours.

Range of effectiveness: Kills all vegetative and nonvegetative forms.

Mode of action: Alkylation of proteins.

Benefits: Excellent application in respiratory therapy equipment; extremely well-penetrating. Ethylene oxide cannot be used if organic matter is still on the equipment. If organic material is present, the equipment must be first exposed to ETO, then washed, then re-exposed to ETO.

Problems: ETO is extremely flamable and must be used with carbon dioxide, nitrogen, and halogenated hydrocarbons (freon) to insure safety. The equipment must be dried thoroughly before ETO administration or ethylene glycol will be formed (very toxic to tissues). ETO cannot be used with gamma irradiated items (see above); equipment sterilized with ETO must be aerated (preferrably in a chamber that has continual airflow) or it will form ethylene glycol when it comes in contact with moisture (oral mucosa). The aeration time must be closely monitored. If no aeration chamber is available, aeration time is at least 24 hrs. Equipment made of neoprene rubber and polyvinyl chloride (PVC) may require seven days for complete aeration to occur. Metals and glassware may be used immediately after sterilization with ETO.

Acid Glutaraldehydes (Sonacide®) pH range 2.7-3.7

Procedure: Expose equipment to a 2% solution at 60 °C.

Range of effectiveness: Bacteriocidal, fungicidal, and virucidal in 20 minutes and sporocidal in one hour. Process takes longer if the Sonacide is at a lower temperature.

Mode of action: Alkylation of proteins by binding to the free amines and OH groups. Also reacts with nucleic acids.

Benefits and problems: Good application with respiratory therapy equipment. However, the equipment requires rinsing and handling after the sterilization process is complete. Sonacide® is irritating to the skin. Although Sonacide® annot be used as an antiseptic (topically), the AARC recommends that activated glutaraldehydes be used for disinfecting equipment in the home, rather than acetic acid.

Alkaline Glutaraldehyde (Cidex®) pH range 7.5-8.5

Procedure: Immerse in a 2% solution buffered with $NaHCO_3$.
Range of effectiveness: Bacteriocidal, virucidal, and fungalcidal in 10 minutes. Requires ten hours to be sporocidal.
Mode of action: Same as acid glutaraldehyde.
Benefits and problems: Same as acid glutaraldehyde.

SUMMARY: OF ALL THE CHEMICAL AND PHYSICAL METHODS AVAILABLE FOR THE PROCESSING OF RESPIRATORY THERAPY EQUIPMENT, ONLY AUTOCLAVING, ACTIVATED GLUTARALDEHYDES, AND ETHYLENE OXIDE ARE BACTERIOCIDAL, VIRUCIDAL, FUNGICIDAL AND SPOROCIDAL.

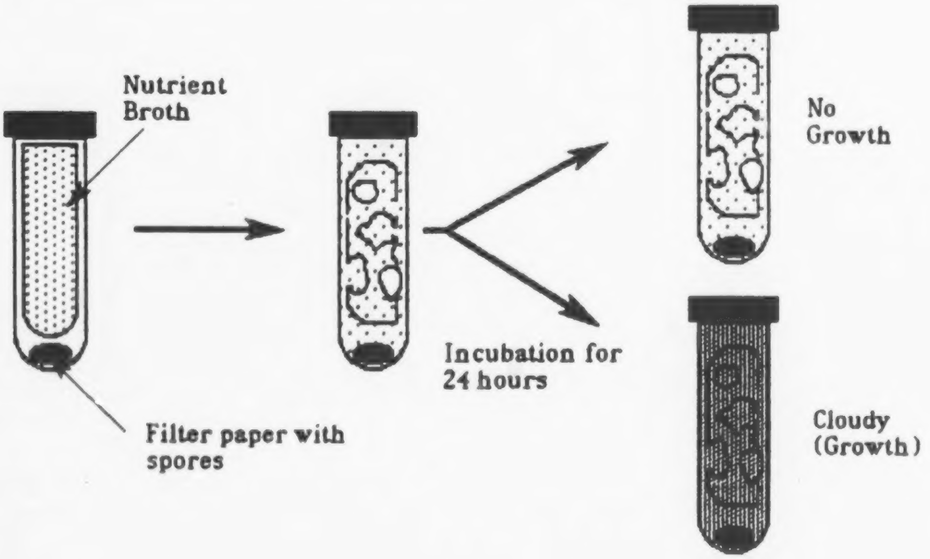
SURVEILLANCE OF STERILIZATION PROCEDURES:

Indicator tape: With ETO - Green tape turns green with red lines after exposure. Autoclaves - Beige tape turns to beige with brown lines after exposure. Indicator tape does not indicate that the steam or ETO was in contact with the materials for an adequate length of time to assure sterilization.

All equipment and materials must be dated and labelled indicating which sterilization run it underwent. If a problem arises with this load, all items run at the same time may be pulled from the shelves. For this reason, all newly sterilized equipment is placed in the back of the shelf. This allows time to pull the equipment if it was not adequately sterilized and insures that the equipment is not allowed to loose its sterility by not being used.

Indicator strip - Placed inside packages that are autoclaved or ETO'ed. This insures that sterilizing agent penetrated the package. Indicator strips do not indicate that the steam or ETO was in contact with the materials for an adequate length of time to assure sterilization.

Biological indicators - Contain spores of Bacillus stearothermophilus and Bacillus subtilis along with nutrient broth and a pH indicator. If the sterilization procedure is complete, the endospores are unable to germinate when the nutrient broth is allowed to come in contact with the spores.


Nutrient Broth
Filter paper with spores
Incubation for 24 hours
No Growth
Cloudy (Growth)

SELF-CHECK

Task: Clean and disinfect used equipment. . . .

Directions: For items 1 through 12, circle the most appropriate response from the choices given (a, b, c, d, or e).

1. Which of the following definitions describe sanitization?

   a. destroying all viable forms of microorganisms
   b. reduction of microbial populations to a safe level as judged by public health requirements
   c. destruction of pathogenic organisms carried out on an inanimate object
   d. destruction of pathogenic organisms carried out on living tissue
   e. a process which prevents the growth of living organisms

2. Which of the following definitions describes antisepsis?

   a. destroying all viable forms of microorganisms
   b. reduction of microbial populations to a safe level as judged by public health requirements
   c. destruction of pathogenic organisms carried out on an inanimate object
   d. destruction of pathogenic organisms carried out on living tissue
   e. a process which prevents the growth of living organisms

3. Which of the following definitions describes sterilization?

   a. destroying all viable forms of microorganisms
   b. reduction of microbial populations to a safe level as judged by public health requirements
   c. destruction of pathogenic organisms carried out on an inanimate object
   d. destruction of pathogenic organisms carried out on living tissue
   e. a process which prevents the growth of living organisms

4. Which combination of the following parameters would assure adequate sterilization by steam autoclaving?

   1. 15 psig
   2. 15 psia
   3. 20-minute cycle time
   4. 10-minute cycle time
   5. 100° C
   6. 121° C

   a. 1,3,5
   b. 2,4,6
   c. 1,3,6
   d. 2,3,6
   e. 1,4,5

5. Which of these methods, when performed properly, result in sterilization of equipment?

    1. pasteurization
    2. ultraviolet radiation
    3. steam autoclaving
    4. ethylene oxide
    5. activated glutaraldehyde

    a. 1,2,3,4,5
    b. 2,3,4,5
    c. 1,3,4,5
    d. 3,4,5
    e. 3,4

6. A method of disinfecting respiratory therapy equipment is required by your department. You are asked to recommend a method that is relatively inexpensive, is applicable to most types of respiratory therapy equipment such as tubing and nebulizers, and will kill the vegetative forms of bacteria. You would recommend:

    a. steam autoclave
    b. ethylene oxide
    c. dry heat
    d. gamma irradiation
    e. pasteurization

7. Which of the following are disadvantages of using activated glutaraldehydes such as Cidex® as sterilization agents?

    1. They are irritating to the skin.
    2. They require up to ten hours to kill spores.
    3. They require a water rinse after the sterilization cycle.
    4. They require handling and packaging the material after the sterilization cycle.
    5. They require aeration of the equipment following the sterilization cycle.

    a. 1,2,3,4,5
    b. 1,2,3,4
    c. 2,3,4,5
    d. 3,4,5
    e. 2,3,5

8. Indicator tape is used with:

   a. ethylene oxide
   b. activated glutaraldehyde
   c. steam autoclaving
   d. a and b
   e. a and c

9. Use of ethylene oxide on equipment that was gamma irradiated forms:

   a. ethylene glycol
   b. iodophors
   c. halogens
   d. antifreeze
   e. ethylene chlorohydrin

10. Which of these parameters are achieved during sterlization with ethylene oxide?

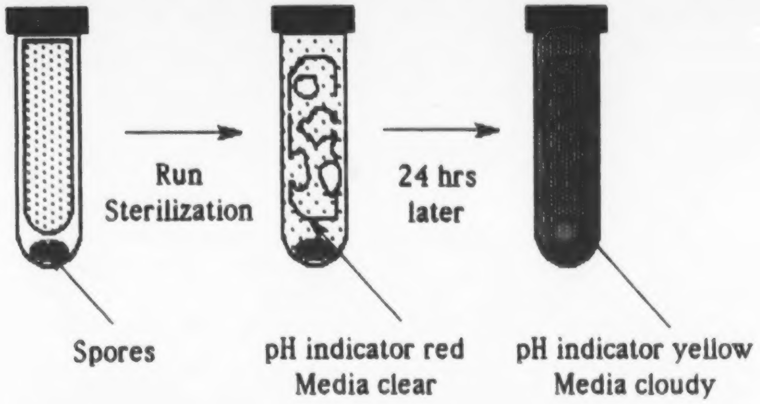
    1. temperature between 49-57° C
    2. temperature between 52-67° C
    3. humidity less than 20%
    4. humidity greater than 50%
    5. gas concentration of at least 200 mg/l
    6. 2-3 hours duration

    a. 1,4,6
    b. 1,3,5
    c. 1,4,5
    d. 2,4,6
    e. 2,3,5

11. Which of these agents would you use to clean most types of respiratory therapy equipment in the home (as recommended by the American Association for Respiratory Care)?

    a. activated glutaraldehydes
    b. autoclaving
    c. acetic acid
    d. boiling
    e. dry heat

12. Given the following biological indicator test, was the sterilization run sterile or nonsterile?


Run Sterilization
24 hrs later
Spores
pH indicator red
Media clear
pH indicator yellow
Media cloudy

a. Sterile
b. Nonsterile

SELF-CHECK ANSWER KEY

1. **b**
2. **d**
3. **a**
4. **c**
5. **d**
6. **e**
7. **b**
8. **e**
9. **e**
10. **a**
11. **a**
12. **b**

If you missed any responses, go back and review the appropriate sections of the resource materials. When you feel confident that you know the materials, request the SLG test from your instructor.

KNOWLEDGE TEST

Task: Clean and disinfect used equipment. . . .

Directions: For items 1 through 12, circle the most appropriate response from the choices given (a, b, c, d, or e).

1. Which of the following definitions describe sanitization?

    a. destroying all viable forms of microorganisms
    b. reduction of microbial populations to a safe level as judged by public health requirements
    c. destruction of pathogenic organisms carried out on an inanimate object
    d. destruction of pathogenic organisms carried out on living tissue
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    a. 1,2,3,4,5
    b. 1,2,3,4
    c. 2,3,4,5
    d. 3,4,5
    e. 2,3,5

8. Indicator tape is used with:

   a. ethylene oxide
   b. activated gluteraldehyde
   c. steam autoclaving
   d. a and b
   e. a and c

9. What is the danger in using ethylene oxide on equipment that was gamma irradiated?

   a. Iodophors are formed.
   b. The toxic chemical hexachlorophene may form.
   c. Toxic halogens may form.
   d. The resulting ethyl alcohol may be impure.
   e. The toxic chemical ethylene chlorohydrin forms.

10. Which of these parameters are achieved during sterlization with ethylene oxide?

    1. temperature between 49-57° C
    2. temperature between 52-67° C
    3. humidity less than 20%
    4. humidity greater than 50%
    5. gas concentration of at least 200 mg/l
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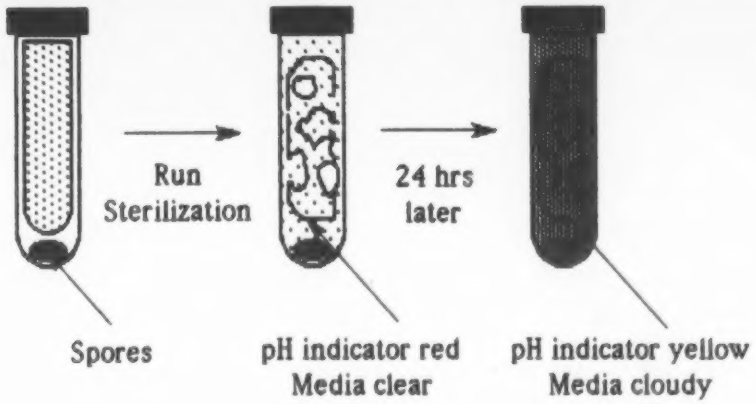
Run
Sterilization
24 hrs
later
Spores
pH indicator red
Media clear
pH indicator yellow
Media cloudy

a. Sterile
b. Nonsterile

KNOWLEDGE TEST ANSWER KEY

1. **b**
2. **d**
3. **a**
4. **c**
5. **d**
6. **e**
7. **b**
8. **e**
9. **e**
10. **a**
11. **a**
12. **b**

If you missed any responses, go back and review the appropriate sections of the resource materials. When you feel confident that you know the materials, request the SLG test from your instructor.

State of Florida
Department of Education
Tallahassee, Florida
Betty Castor, Commissioner
Affirmative action/equal opportunity employer

Division of Vocational, Adult, and Community Education

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CAREER MERIT ACHIEVEMENT PLAN
(CAREER MAP)

RESPIRATORY THERAPY

(0317.081800)

____

STUDENT'S NAME

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DEPARTMENT OF EDUCATION
Betty Castor, Commissioner

DIVISION OF VOCATIONAL, ADULT, AND COMMUNITY EDUCATION
Robert S. Howell, Director

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Department of Education
Florida Education Center
Tallahassee, FL 32399
(904) 488-0484

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Instructor's Name ______________________ **Initials** __________

School ______________________________

____

Date Started ______________________________

PRIMARY JOB TITLE FOR THIS INSTRUCTIONAL PROGRAM

- Respiratory Therapist (DOT #079.361-010)

ACKNOWLEDGMENTS

The following business/industry representatives are recognized for their valuable contributions to the identification and validation of the competencies reflected in this MAP.

Supervisors and Industry Representatives

Terry Beard, R.R.T., R.N., Manager, Respiratory Care Services and Purfusion Technology, Morton Plant Hospital, Clearwater
Karin Blaquier, R.R.T., Director, Cardiopulmonary Services, Marion Community Hospital, Ocala
Timothy J. Coons, R.R.T., Director, Respiratory Care Services, Shands Hospital, University of Florida, Gainesville
Dick Hahn, M.B.A., R.R.T., Technical Director, Respiratory Care, North Florida Regional Medical Center, Gainesville
Patti Ershowsky, R.R.T., M.S., Assistant Technical Director, Respiratory Care Services, Mount Sinai Hospital, Miami Beach
Lee C. Hauser, R.R.T., M.S., Administration Director, Department of Pulmonary Medicine and Neurophysiology, Baptist Medical Center, Jacksonville
Douglas C. Masini, C.P.F.T., R.R.T., Manager, Respiratory Services, Memorial Medical Center, Jacksonville
Harry M. Motter, R.R.T., Director, Cardiopulmonary Services, Mease Hospital, Dunedin
John B. Odenweller, Jr., R.R.T., R.C.P.T., Director, Cardiovascular/Pulmonary Medicine, Broward General Medical Center, Fort Lauderdale
Joseph P. Schlagheck, R.R.T., Director, Cardiopulmonary Services, Palm of Pasadena Hospital, St. Petersburg
Lydia L. Stelnicki, R.R.T., B.S., Supervisor, Respiratory Therapy, Halofax Medical Center, Daytona Beach
Dan G. Strub, R.N., R.R.T., Administration Director, Cardiopulmonary and EEG Services, Memorial Hospital, Hollywood
Marlene Thomas, R.R.T., Assistant Director, Respiratory Care, West Volusia Hospital, Deland

The Division of Vocational, Adult, and Community Education expresses appreciation to the following educators in respiratory therapy programs throughout the state who reviewed the standards included in this MAP.

Charles Carroll, R.R.T., M.Ed., Chair, Allied Health Department, Daytona Beach Community College, Daytona Beach
Marsha Karkheck, R.R.T., M.Ed., Department Chair, Respiratory Therapy Technician, Pinellas Technical Education Center, St. Petersburg
Stephen Mikles, R.R.T., Program Director, Respiratory Care, St. Petersburg Junior College, Pinellas Park
Carol Miller, R.R.T., M.S., Chair, Cardiopulmonary Sciences, Miami-Dade Community College, Miami

John Prince, R.R.T., Department Head, Respiratory Care, Broward Community College, Fort Lauderdale

James Woods, R.R.T., M.S., Director, Allied Health, Florida Community College at Jacksonville, Jacksonville

David Yonutas, R.R.T., M.S., Coordinator, Respiratory Therapy Program, Santa Fe Community College, Gainesville

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***This MAP contains shortened standards. The full text of every standard in this program can be found in the Appendix.**

OVERVIEW

The Career MAP includes the competencies required for entry into the work force as a respiratory therapist. Business and industry representatives have recommended that students in this field master these competencies in order to become employable. Local education agencies (LEAs) may adapt these competencies to meet their work-force needs.

Purposes of the MAP

The purposes of the MAP are to display the student performance standards (SPSs) required by the LEA and to document the level of achievement on SPSs that the student demonstrates.

How to Use the MAP

Administrator and Instructor. The administrator and instructor can use Career MAPs in curriculum planning, program updating and improvement, and teacher recruitment, selection, and updating. If the LEA changes or adds SPSs, the revised or additional SPSs should be included in the blank boxes that appear within each intended outcome or at the end of this MAP.

Instructor. The instructor can use Career MAPs to keep track of student progress on SPSs. By periodically reviewing the ratings on standards, the instructor can identify a student's strengths and weaknesses and on that basis identify the skills for which the student needs remedial instruction or advanced training. MAPs can also be useful in student counseling and evaluation.

Student. The student may use the MAP to show potential employers the performance standards he or she has mastered. In order to present a complete record, the student should encourage the instructor to rate his or her level of achievement on all the appropriate SPSs and to fill in the verification form in the back of this MAP.

Employer. The MAP shows an employer the SPSs mastered by the student (a prospective employee) and the proficiency level achieved on each one. This information can help the employer make decisions about hiring, job assignments, and job-training needs.

Rating Student Performance

Performance Competencies. Ratings on SPSs should be based upon business/industrial performance standards. The evaluator observes and evaluates student performance as he or she would in the role of the employer or supervisor.

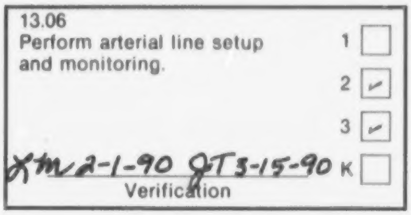
For each skill listed, the learner receives a rating of 1, 2, or 3. Each rating indicates a particular level of achievement:

1 = Learner demonstrates knowledge and understanding of this SPS, but is not yet able to apply that knowledge or understanding.

2 = Learner performs this SPS satisfactorily with only periodic supervision.

3 = Learner performs this SPS satisfactorily without supervision.

Whenever a performance standard is demonstrated, the instructor checks the appropriate rating box (1, 2, or 3) and initials and dates the verification line. If the student later demonstrates a higher level of achievement on a performance competency, the instructor checks the higher level and then enters his or her initials and the new date on the verification line, as shown in the following example:

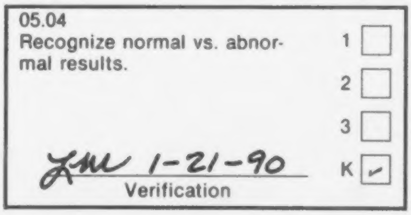


13.06
Perform arterial line setup and monitoring.

1 ☐
2 ☑
3 ☑
K ☐

Lm 2-1-90 JT 3-15-90
Verification

Knowledge Competencies. For each SPS that is a knowledge competency only, with no manipulative skill involved, only one level of achievement is possible. If the student masters the competency, he or she receives a check in the bottom box ("K"), as shown below:



05.04
Recognize normal vs. abnormal results.

1 ☐
2 ☐
3 ☐
K ☑

Lm 1-21-90
Verification

NOTE: An SPS without a checked rating indicates that the learner has not mastered the standard from lack of ability, time, opportunity, or need (the student's area of specialization may not have required it).

01.0 SELECT, REVIEW, OBTAIN, AND INTERPRET PATIENT DATA.

*See Appendix.

01.01 Review existing data in patient record. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.02* Collect and evaluate additional pertinent clinical information . . . including inspection, palpation, percussion, auscultation, and vital signs. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.03 Collect and evaluate additional pertinent clinical information by inspection of chest x-ray and review of ABG's. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
01.04 Perform and evaluate bedside pulmonary assessment and procedures (Vt, FVC, NIF, etc.). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.05 Interview and evaluate patient's current medical status. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.06 Recommend and/or obtain additional pertinent data based on patient assessment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
01.07 Perform and evaluate appropriate cardiorespiratory tests including EKG. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.08 Determine appropriateness of prescribed respiratory care plan and recommend modification where indicated. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.09 Participate in development of respiratory care plan. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

02.0 SELECT, ASSEMBLE, AND CHECK EQUIPMENT FOR PROPER FUNCTION, OPERATION, CLEANLINESS, AND CALIBRATION.

*See Appendix.

02.01 Select suitable equipment from available supply appropriate to respiratory care plan. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.02 Assemble parts and check for completeness, condition, cleanliness, and calibration. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.03 Check calibration and operation of device and correct malfunctions or send for repair (quality control). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
02.04* Clean and disinfect used equipment . . . using appropriate method . . . and following Centers for Disease Control (CDC) guidelines. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.05 Store equipment, transport equipment, and identify gases. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.06 Maintain inventory, monitor oxygen storage systems, and change cylinder bank. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

02.07
Transport high-pressure cylinders; check dates and pressure.
1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
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1 ☐
2 ☐
3 ☐
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1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

03.0 INITIATE AND CONDUCT THERAPEUTIC PROCEDURES; RECOGNIZE WHEN PRESCRIBED THERAPEUTIC PROCEDURE IS INAPPROPRIATE; AND FOLLOW PROPER PROTOCOL FOR NOTIFICATION.

*See Appendix.

03.01
Explain planned therapy and goals to patients in nontechnical, understandable terms to achieve optimal therapeutic outcome.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.02
Protect patient from nosocomial infection by adherence to infection control policies and procedures.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.03
Conduct prescribed therapeutic procedures to achieve the maintenance of a patient airway, including the care of artificial airways.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.04
Perform sterile suctioning technique of endotracheal tube and nasopharyngeal/oropharyngeal airway (for secretion removal).
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.05*
Conduct prescribed therapeutic procedures . . . including the preparation of specimens for analysis.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.06
Conduct prescribed therapeutic procedures to achieve adequate spontaneous and mechanical ventilation.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.07
Conduct prescribed therapeutic procedures to achieve adequate arterial and tissue oxygenation, including CPAP and/or special therapeutic gases.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.08
Evaluate and monitor prescribed respiratory therapy and patient's response to therapy.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.09*
Make necessary recommendation for modification in therapeutic procedures . . . and/or appropriate laboratory data, following proper protocol.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.10
Recommend modification in the respiratory care prescription based on the patient's response.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.11
Initiate and conduct pulmonary rehabilitation and home care.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.12
Terminate treatments based on patient's adverse reaction to any type of therapy being administered.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.13
Modify treatment techniques within the prescription.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.14
Verify computations and note erroneous data.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.15
Initiate, conduct and modify prescribed therapy.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.16 Initiate and provide emergency resuscitation. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.17 Perform cardiopulmonary resuscitation on an infant patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.18 Perform cardiopulmonary resuscitation on a child. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.19 Perform one-rescuer cardiopulmonary resuscitation on an adult patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.20 Perform two-rescuer cardiopulmonary resuscitation on an adult patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.21 Perform obstructed airway maneuver on an unconscious adult patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.22 Perform obstructed airway maneuver on a conscious adult patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.23 Set up, assist with, and perform oral intubation on an unconscious adult patient, or model. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.24 Ventilate patient with a manual resuscitator with mask. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.25 Ventilate patient with demand valve unit with mask. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.26 Add an intermittent mandatory ventilation setup with a reservior bag to a ventilator circuit. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.27 Add positive and expiratory pressure (PEEP) to ventilator circuit. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.28 Perform extubation of adult patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.29 Monitor return to normal physiology; reintubate if necessary. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

04.0 MAINTAIN RECORDS AND COMMUNICATIONS.

04.01 Use computer system to access and input patient data, when appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.02 Chart on medical record: record therapy and results using conventional terminology as required by hospital policy and regulatory agencies. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.03 Be familiar with and use departmental policy and procedure manual; actively participate in recommending updates. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

04.04 Consistently display a professional and positive attitude in all communications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.05 Display respect for patients regardless of race, religion, color, creed, sex, age, or diagnosis. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.06 Maintain confidentiality of all patient records and information. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

05.0 PERFORM CARDIORESPIRATORY DIAGNOSTIC TESTING, INCLUDING PULMONARY-FUNCTION TESTING.

05.01 Obtain pulmonary history. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.02 Perform simple spirometry maneuvers, including tidal volume, minute volume, and vital capacity. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.03 Compute patient normal values. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.04 Recognize normal vs. abnormal results. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.05 Measure lung volumes and capacities. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.06 Perform diffusion studies. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.07 Perform gas distribution tests. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.08 Perform and evaluate cardiovascular monitoring. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

06.0 DRAW ARTERIAL AND MIXED VENOUS BLOOD SAMPLES AND ANALYZE BLOOD GASES AND HEMOGLOBIN VALUES.

06.01 Obtain appropriate equipment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.02 Maintain quality control on blood gas analyzer and co-oximeter. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.03 Identify patient, introduce self, and explain procedure. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
06.04 Perform Allen test or other technique to assess collateral circulation. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.05 Wash hands, prepare and collect sample from appropriate site, and place in ice slush. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.06 Apply pressure for required time when appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
06.07 Place blood sample into the blood gas analyzer/co-oximeter according to manufacturer's directions. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.08 Perform entire procedure following Centers for Disease Control (CDC) guidelines and taking universal precautions. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

07.0 PERFORM MECHANICAL VENTILATION.

07.01 Recognize indications for ventilation, verifying physician's order as necessary. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.02 Select correct type and/or mode of ventilation. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.03 Determine that ventilator is functioning safely and properly. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
07.04 Connect mechanical ventilator to patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.05 Monitor patient physiology and make appropriate ventilator changes if necessary. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.06 Address needs of the patient, including psychological, physical, and emotional. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

RESPIRATORY THERAPY

07.07 Recognize indications for adjunctive airway maneuvers. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.08 Determine patient's readiness for weaning. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.09 Wean patient from ventilator. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
07.10 Monitor patient's return to normal physiology; reventilate if necessary. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

08.0 PERFORM INFECTION-CONTROL TECHNIQUES.

08.01 Apply infection-control techniques following Centers for Disease Control (CDC) guidelines and taking universal precautions. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	08.02 Don isolation cap, mask, gown, and gloves. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	08.03 Perform prescribed therapy in an isolation setting. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
08.04 Discard/double-bag used equipment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	08.05 List the types of isolation with the required apparel/procedures, etc. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	08.06 Chart activity related to isolation setting. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

09.0 PERFORM CLEANING, STERILIZATION, AND GENERAL MAINTENANCE OF EQUIPMENT.

09.01
Maintain a use record on special equipment.
1 ☐
2 ☐
3 ☐
K ☐
Verification

09.02
Maintain equipment maintenance records.
1 ☐
2 ☐
3 ☐
K ☐
Verification

09.03
Maintain preventive maintenance records.
1 ☐
2 ☐
3 ☐
K ☐
Verification

09.04
Clean used equipment, wrap, and sterilize, using appropriate method (gas, temperature, and chemical).
1 ☐
2 ☐
3 ☐
K ☐
Verification

09.05
Operate sterilizer, if applicable, or send to central service.
1 ☐
2 ☐
3 ☐
K ☐
Verification

09.06
Store returned sterilized equipment safely, being mindful of sterilization expiration dates.
1 ☐
2 ☐
3 ☐
K ☐
Verification

9.07
Perform routine maintenance according to manufacturer's directions.
1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

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Verification

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Verification

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Verification

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2 ☐
3 ☐
K ☐
Verification

10.0 INSTRUCT PATIENT IN CARDIORESPIRATORY REHABILITATION.

10.01
Instruct patient and family in equipment cleaning, care, and use.
1 ☐
2 ☐
3 ☐
K ☐
Verification

10.02
Instruct patient and family in proper breathing/coughing exercises.
1 ☐
2 ☐
3 ☐
K ☐
Verification

10.03
Instruct patient and family in physical exercise and in activities of daily living.
1 ☐
2 ☐
3 ☐
K ☐
Verification

10.04
Instruct patient and family about the disease state.
1 ☐
2 ☐
3 ☐
K ☐
Verification

10.05
Instruct patient and family about when to call the physician.
1 ☐
2 ☐
3 ☐
K ☐
Verification

10.06
Instruct patient and family in how to recognize deterioration in physical status.
1 ☐
2 ☐
3 ☐
K ☐
Verification

10.07 Instruct patient and family in proper drug dosage and administration techniques and in the importance of the therapy. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	10.08 Instruct patient and family in proper therapy techniques. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

11.0 DEMONSTRATE EMPLOYABILITY SKILLS.

11.01 Conduct a job search. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.02 Secure information about a job. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.03 Identify documents that may be required when applying for a job. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
11.04 Complete a job application. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.05 Demonstrate competence in job interview techniques. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
11.07 Identify acceptable work habits. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.08 Demonstrate knowledge of how to make job changes appropriately. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.09 Demonstrate acceptable employee health habits. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
11.10 Identify state licensure and continuing education requirements. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

RESPIRATORY THER

12.0 ADAPT APPROPRIATE RESPIRATORY CARE PROCEDURES TO THE HOME CARE ENVIRONMENT.

12.01 Provide for 02 administration, aerosol and bronchial hygiene therapy, and lung expansion therapy in the home. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.02 Arrange for life support and monitoring (i.e., mechanical ventilation, apnea monitoring, and nasal CPAP) in the home. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.03 Instruct patient, family, and other health care workers on the appropriate use, operation, cleaning, and maintenance of respiratory care equipment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
12.04 Perform patient monitoring and assessment in the home. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.05 Recognize and report symptoms of abuse and neglect. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

13.0 PERFORM ADVANCED RESPIRATORY CARE PROCEDURES.

13.01 Assume primary clinical responsibility for all respiratory care modalities. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.02 Check physician's orders or consult with physician. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.03 Design and implement respiratory care plan as appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.04 Perform pulmonary artery sampling. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.05 Perform cardiac output procedures. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.06 Perform arterial line setup and monitoring. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.07 Perform transcutaneous gas monitoring. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.08 Perform noninvasive monitoring techniques as appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.09 Perform pulseoximetry monitoring. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

RESPIRATORY THERAPY

13.10
Perform various advanced procedures, based on local practice.
1 ☐
2 ☐
3 ☐
K ☐
Verification

13.11
Remove, clean, and replace inner canula tube and/or replace tracheostomy tube, as ordered.
1 ☐
2 ☐
3 ☐
K ☐
Verification

13.12
Perform various mathematical computations dealing with cardiopulmonary assessment.
1 ☐
2 ☐
3 ☐
K ☐
Verification

13.13
Intubate infant.
1 ☐
2 ☐
3 ☐
K ☐
Verification

13.14
Initiate infant mechanical ventilation with appropriate ventilator and parameter including CPAP and PEEP.
1 ☐
2 ☐
3 ☐
K ☐
Verification

13.15
Extubate infant, within recommended criteria.
1 ☐
2 ☐
3 ☐
K ☐
Verification

13.16
Monitor return to normal physiology; reventilate if necessary.
1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
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Verification

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K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

14.0 ADMINISTER CARDIORESPIRATORY DRUGS.

*See Appendix.

14.01*
Demonstrate knowledge of drug classifications, actions and uses, . . . how supplied, mixing instructions, storage, and laboratory test inferences.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.02
Recognize the critical importance of this activity and follow directions.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.03
Verify physician's orders.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.04
Prepare medication for administration.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.05
Identify patient; introduce self.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.06
Administer drug.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.07
Document administering of drug in all appropriate records.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.08
Recognize the symptoms of drug idiosyncracies.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.09
Identify adverse drug reactions and take appropriate action.
1 ☐
2 ☐
3 ☐
K ☐
Verification

14.10 Recognize anaphylactic shock. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

15.0 ASSIST THE PHYSICIAN WITH SPECIAL RESPIRATORY THERAPY PROCEDURES.

15.01 Assist with insertion and maintenance of an umbilical arterial and/or venous catheter. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	15.02 Assist with bronchoscopy, chest tubes, cardiac catheterizations. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	15.03 Assist with Swan-Ganz catheterization and other invasive monitoring. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
15.04 Assist with thoracentesis and tracheostomy. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

16.0 DEMONSTRATE LEADERSHIP AND SUPERVISORY SKILLS.

16.01 Perform evaluations of subordinate personnel, maintaining objectivity. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	16.02 Make assignments to appropriate personnel within the department. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	16.03 Observe employee behavior and counsel re attitudes, demeanor, appearance, protocol, and interaction. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

16.04 Encourage/provide continuing education activities. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	16.05 Observe subordinate performing procedures; correct discrepancies. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	16.06 Instruct subordinates in new procedures/new equipment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
16.07 Demonstrate knowledge of productivity and control of resources, using budgeting, inventory control, and ordering of supplies. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	16.08 Recognize state-required licensure and documentation (i.e., experiential and public display). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

17.0 DEMONSTRATE KNOWLEDGE OF IMMUNE-DEFICIENCY DISEASES, INCLUDING AIDS.

17.01 Distinguish between fact and fallacy about the transmission and treatment of immune-deficiency diseases, including HIV infection. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	17.02 Identify community resources and services available to the victims of immune-deficiency diseases. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	17.03 Identify at-risk behaviors which promote the spread of AIDS and the public education necessary to combat the spread of immune-deficiency diseases. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
17.04 Apply infection-control techniques designed to prevent the spread of diseases to patients, following Centers for Disease Control (CDC) guidelines. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	17.05 Demonstrate knowledge of the legal aspects of AIDS. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

RESPIRATORY THERA

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

RESPIRATORY THERAPY

VERIFICATION

Each instructor who rates this student on competencies in this MAP should fill in one of the boxes below.

Initials
Signature
Title
School Name
School Address

Initials
Signature
Title
School Name
School Address

Initials
Signature
Title
School Name
School Address

NOTES

This section of the MAP is provided for the instructor, employer, or student to list additional qualifying statements or other pertinent information. All comments should be initialed for verification.

APPENDIX

Below is a listing of all outcomes and student performance standards for Respiratory Therapist.

01.0 SELECT, REVIEW, OBTAIN, AND INTERPRET PATIENT DATA.

01.01
Review existing data in patient record.

01.02
Collect and evaluate additional pertinent clinical information by assessing patient's overall cardiorespiratory status, including inspection, palpation, percussion, auscultation, and vital signs.

01.03
Collect and evaluate additional pertinent clinical information by inspection of chest x-ray and review of ABG's.

01.04
Perform and evaluate bedside pulmonary assessment and procedures (Vt, FVC, NIF, etc.).

01.05
Interview and evaluate patient's current medical status.

01.06
Recommend and/or obtain additional pertinent data based on patient assessment.

01.07
Perform and evaluate appropriate cardiorespiratory tests including EKG.

01.08
Determine appropriateness of prescribed respiratory care plan and recommend modification where indicated.

01.09
Participate in development of respiratory care plan.

02.0 SELECT, ASSEMBLE, AND CHECK EQUIPMENT FOR PROPER FUNCTION, OPERATION, CLEANLINESS, AND CALIBRATION.

02.01
Select suitable equipment from available supply appropriate to respiratory care plan.

02.02
Assemble parts and check for completeness, condition, cleanliness, and calibration.

02.03
Check calibration and operation of device and correct malfunctions or send for repair (quality control).

02.04
Clean and disinfect used equipment wrap and sterilize using appropriate method (gas, temperature, chemical), and following Centers for Disease Control (CDC) guidelines.

02.05
Store equipment, transport equipment, and identify gases.

02.06
Maintain inventory, monitor oxygen storage systems, and change cylinder bank.

02.07
Transport high-pressure cylinders; check dates and pressure.

03.0 INITIATE AND CONDUCT THERAPEUTIC PROCEDURES; RECOGNIZE WHEN PRESCRIBED THERAPEUTIC PROCEDURE IS INAPPROPRIATE; AND FOLLOW PROPER PROTOCOL FOR NOTIFICATION.

03.01
Explain planned therapy and goals to patients in nontechnical understandable terms to achieve optimal therapeutic outcome.

03.02
Protect patient from nosocomial infection by adherence to infection control policies and procedures.

03.03
Conduct prescribed therapeutic procedures to achieve the maintenance of a patient airway, including the care of artificial airways.

03.04
Perform sterile suctioning technique of endotracheal tube and nasopharyngeal/oropharyngeal airway (for secretion removal).

03.05
Conduct prescribed therapeutic procedures to achieve the removal of bronchopulmonary secretions, including the preparation of specimens for analysis.

03.06
Conduct prescribed therapeutic procedures to achieve adequate spontaneous and mechanical ventilation.

03.07
Conduct prescribed therapeutic procedures to achieve adequate arterial and tissue oxygenation, including CPAP and/or special therapeutic gases.

03.08
Evaluate and monitor prescribed respiratory therapy and patient's response to therapy.

03.09
Make necessary recommendation for modification in therapeutic procedures based on patient's response and/or appropriate laboratory data, following proper protocol.

03.10
Recommend modification in the respiratory care prescription based on the patient's response.

03.11
Initiate and conduct pulmonary rehabilitation and home care.

03.12
Terminate treatments based on patient's adverse reaction to any type of therapy being administered.

03.13
Modify treatment techniques within the prescription.

03.14
Verify computations and note erroneous data.

03.15
Initiate, conduct, and modify prescribed therapy.

03.16
Initiate and provide emergency resuscitation.

03.17
Perform cardiopulmonary resuscitation on an infant patient.

03.18
Perform cardiopulmonary resuscitation on a child.

03.19
Perform one-rescuer cardiopulmonary resuscitation on an adult patient.

03.20
Perform two-rescuer cardiopulmonary resuscitation on an adult patient.

03.21
Perform obstructed airway maneuver on an unconscious adult patient.

03.22
Perform obstructed airway maneuver on a conscious adult patient.

03.23
Set up, assist with, and perform oral intubation on an unconscious adult patient, or model.

03.24
Ventilate patient with a manual resuscitator with mask.

03.25
Ventilate patient with demand valve unit with mask.

03.26
Add an intermittent mandatory ventilation setup with a reservior bag to a ventilator circuit.

03.27
Add positive and expiratory pressure (PEEP) to ventilator circuit.

03.28
Perform extubation of adult patient.

03.29
Monitor return to normal physiology; reintubate if necessary.

04.0 MAINTAIN RECORDS AND COMMUNICATIONS.

04.01
Use computer system to access and input patient data, when appropriate.

04.02
Chart on medical record: record therapy and results using conventional terminology as required by hospital policy and regulatory agencies.

04.03
Be familiar with and use departmental policy and procedure manual; actively participate in recommending updates.

04.04
Consistently display a professional and positive attitude in all communications.

04.05
Display respect for patients regardless of race, religion, color, creed, sex, age, or diagnosis.

04.06
Maintain confidentiality of all patient records and information.

05.0 PERFORM CARDIORESPIRATORY DIAGNOSTIC TESTING, INCLUDING PULMONARY-FUNCTION TESTING.

05.01
Obtain pulmonary history.

05.02
Perform simple spirometry maneuvers, including tidal volume, minute volume, and vital capacity.

05.03
Compute patient normal values.

05.04
Recognize normal vs. abnormal results.

05.05
Measure lung volumes and capacities.

05.06
Perform diffusion studies.

05.07
Perform gas distribution tests.

05.08
Perform and evaluate cardiovascular monitoring.

06.0 DRAW ARTERIAL AND MIXED VENOUS BLOOD SAMPLES AND ANALYZE BLOOD GASES AND HEMOGLOBIN VALUES.

06.01
Obtain appropriate equipment.

06.02
Maintain quality control on blood gas analyzer and co-oximeter.

06.03
Identify patient, introduce self, and explain procedure.

06.04
Perform Allen test or other technique to assess collateral circulation.

06.05
Wash hands, prepare and collect sample from appropriate site, and place in ice slush.

06.06
Apply pressure for required time when appropriate.

06.07
Place blood sample into the blood gas analyzer/co-oximeter according to manufacturer's directions.

06.08
Perform entire procedure following Centers for Disease Control (CDC) guidelines and taking universal precautions.

07.0 PERFORM MECHANICAL VENTILATION.

07.01
Recognize indications for ventilation, verifying physician's order as necessary.

07.02
Select correct type and/or mode of ventilation.

07.03
Determine that ventilator is functioning safely and properly.

07.04
Connect mechanical ventilator to patient.

07.05
Monitor patient physiology and make appropriate ventilator changes if necessary.

07.06
Address needs of the patient, including psychological, physical, and emotional.

07.07
Recognize indications for adjunctive airway maneuvers.

07.08
Determine patient's readiness for weaning.

07.09
Wean patient from ventilator.

07.10
Monitor patient's return to normal physiology; reventilate if necessary.

08.0 PERFORM INFECTION-CONTROL TECHNIQUES.

08.01
Apply infection-control techniques following Centers for Disease Control (CDC) guidelines and taking universal precautions.

08.02
Don isolation cap, mask, gown, and gloves.

08.03
Perform prescribed therapy in an isolation setting.

08.04
Discard/double-bag used equipment.

08.05
List the types of isolation with the required apparel/procedures, etc.

08.06
Chart activity related to isolation setting.

09.0 PERFORM CLEANING, STERILIZATION, AND GENERAL MAINTENANCE OF EQUIPMENT.

09.01
Maintain a use record on special equipment.

09.02
Maintain equipment maintenance records.

09.03
Maintain preventive maintenance records.

09.04
Clean used equipment, wrap, and sterilize, using appropriate method (gas, temperature, and chemical).

09.05
Operate sterilizer, if applicable, or send to central service.

09.06
Store returned sterilized equipment safely, being mindful of sterilization expiration dates.

9.07
Perform routine maintenance according to manufacturer's directions.

10.0 INSTRUCT PATIENT IN CARDIORESPIRATORY REHABILITATION.

10.01
Instruct patient and family in equipment cleaning, care, and use.

10.02
Instruct patient and family in proper breathing/coughing exercises.

10.03
Instruct patient and family in physical exercise and in activities of daily living.

10.04
Instruct patient and family about the disease state.

10.05
Instruct patient and family about when to call the physician.

10.06
Instruct patient and family in how to recognize deterioration in physical status.

10.07
Instruct patient and family in proper drug dosage and administration techniques and in the importance of the therapy.

10.08
Instruct patient and family in proper therapy techniques.

11.0 DEMONSTRATE EMPLOYABILITY SKILLS.

11.01
Conduct a job search.

11.02
Secure information about a job.

11.03
Identify documents that may be required when applying for a job.

11.04
Complete a job application.

11.05
Demonstrate competence in job interview techniques.

11.06
Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.

11.07
Identify acceptable work habits.

11.08
Demonstrate knowledge of how to make job changes appropriately.

11.09
Demonstrate acceptable employee health habits.

11.10
Identify state licensure and continuing education requirements.

12.0 ADAPT APPROPRIATE RESPIRATORY CARE PROCEDURES TO THE HOME CARE ENVIRONMENT.

12.01
Provide for 02 administration, aerosol and bronchial hygiene therapy, and lung expansion therapy in the home.

12.02
Arrange for life support and monitoring (i.e., mechanical ventilation, apnea monitoring, and nasal CPAP) in the home.

12.03
Instruct patient, family, and other health care workers on the appropriate use, operation, cleaning, and maintenance of respiratory care equipment.

12.04
Perform patient monitoring and assessment in the home.

12.05
Recognize and report symptoms of abuse and neglect.

13.0 PERFORM ADVANCED RESPIRATORY CARE PROCEDURES.

13.01
Assume primary clinical responsibility for all respiratory care modalities.

13.02
Check physician's orders or consult with physician.

13.03
Design and implement respiratory care plan as appropriate.

13.04
Perform pulmonary artery sampling.

13.05
Perform cardiac output procedures.

13.06
Perform arterial line setup and monitoring.

13.07
Perform transcutaneous gas monitoring.

13.08
Perform noninvasive monitoring techniques as appropriate.

13.09
Perform pulseoximetry monitoring.

13.10
Perform various advanced procedures, based on local practice.

13.11
Remove, clean, and replace inner canula tube and/or replace tracheostomy tube, as ordered.

13.12
Perform various mathematical computations dealing with cardiopulmonary assessment.

13.13
Intubate infant.

13.14
Initiate infant mechanical ventilation with appropriate ventilator and parameter including CPAP and PEEP.

13.15
Extubate infant, within recommended criteria.

13.16
Monitor return to normal physiology; reventilate if necessary.

14.0 ADMINISTER CARDIORESPIRATORY DRUGS.

14.01
Demonstrate knowledge of drug classifications, actions and uses, route of administration and usual adult doses, mathematics neded to calculate divided or children's dosage, contraindications, drug interactions, adverse reactions, how supplied, mixing instructions, storage, and laboratory test inferences.

14.02
Recognize the critical importance of this activity and follow directions.

14.03
Verify physician's orders.

14.04
Prepare medication for administration.

14.05
Identify patient; introduce self.

14.06
Administer drug.

14.07
Document administering of drug in all appropriate records.

14.08
Recognize the symptoms of drug idiosyncracies.

14.09
Identify adverse drug reactions and take appropriate action.

14.10
Recognize anaphylactic shock.

15.0 ASSIST THE PHYSICIAN WITH SPECIAL RESPIRATORY THERAPY PROCEDURES.

15.01
Assist with insertion and maintenance of an umbilical arterial and/or venous catheter.

15.02
Assist with bronchoscopy, chest tubes, cardiac catheterizations.

15.03
Assist with Swan-Ganz catheterization and other invasive monitoring.

15.04
Assist with thoracentesis and tracheostomy.

16.0 DEMONSTRATE LEADERSHIP AND SUPERVISORY SKILLS.

16.01
Perform evaluations of subordinate personnel, maintaining objectivity.

16.02
Make assignments to appropriate personnel within the department.

16.03
Observe employee behavior and counsel re attitudes, demeanor, appearance, protocol, and interaction.

16.04
Encourage/provide continuing education activities.

16.05
Observe subordinate performing procedures; correct discrepancies.

16.06
Instruct subordinates in new procedures/new equipment.

16.07
Demonstrate knowledge of productivity and control of resources, using budgeting, inventory control, and ordering of supplies.

16.08
Recognize state-required licensure and documentation (i.e., experiential and public display).

17.0 DEMONSTRATE KNOWLEDGE OF IMMUNE-DEFICIENCY DISEASES, INCLUDING AIDS.

17.01
Distinguish between fact and fallacy about the transmission and treatment of immune-deficiency diseases, including HIV infection.

17.02
Identify community resources and services available to the victims of immune-deficiency diseases.

17.03
Identify at-risk behaviors which promote the spread of AIDS and the public education necessary to combat the spread of immune-deficiency diseases.

17.04
Apply infection-control techniques designed to prevent the spread of diseases to patients, following Centers for Disease Control (CDC) guidelines.

17.05
Demonstrate knowledge of the legal aspects of AIDS.

CAREER MERIT ACHIEVEMENT PLAN (CAREER MAP)

RESPIRATORY THERAPY TECHNICIAN

(0317.081900)

STUDENT'S NAME

State of Florida

An affirmative action/equal opportunity employer

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Betty Castor, Commissioner

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Bureau of Vocational Program and Staff Development
Division of Vocational, Adult, and Community Education
Department of Education
Florida Education Center
Tallahassee, FL 32399
(904) 488-0484

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Instructor's Name ______________________ **Initials** __________

School ______________________________

____

Date Started ______________________________

PRIMARY JOB TITLE FOR THIS INSTRUCTIONAL PROGRAM

- Respiratory Therapy Technician

ACKNOWLEDGMENTS

The following business/industry representatives are recognized for their valuable contributions to the identification and validation of the competencies reflected in this MAP:

Supervisors and Industry Representatives

Terry Beard, R.R.T., R.N., Manager, Respiratory Care Services and Purfusion Technology, Morton Plant Hospital, Clearwater

Karin Blaquier, R.R.T., Director, Cardiopulmonary Services, Marion Community Hospital, Ocala

Timothy J. Coons, R.R.T., Director, Respiratory Care Services, Shands Hospital, University of Florida, Gainesville

Dick Hahn, M.B.A., R.R.T., Technical Director, Respiratory Care, North Florida Regional Medical Center, Gainesville

Patti Ershowsky, R.R.T., M.S., Assistant Technical Director, Respiratory Care Services, Mount Sinai Hospital, Miami Beach

Lee C. Hauser, R.R.T., M.S., Administration Director, Department of Pulmonary Medicine and Neurophysiology, Baptist Medical Center, Jacksonville

Douglas C. Masini, C.P.F.T., R.R.T., Manager, Respiratory Services, Memorial Medical Center, Jacksonville

Harry M. Motter, R.R.T., Director, Cardiopulmonary Services, Mease Hospital, Dunedin

John B. Odenweller, Jr., R.R.T., R.C.P.T., Director, Cardiovascular/Pulmonary Medicine, Broward General Medical Center, Fort Lauderdale

Joseph P. Schlagheck, R.R.T., Director, Cardiopulmonary Services, Palm of Pasadena Hospital, St. Petersburg

Lydia L. Stelnicki, R.R.T., B.S., Supervisor, Respiratory Therapy, Halofax Medical Center, Daytona Beach

Dan G. Strub, R.N., R.R.T., Administration Director, Cardiopulmonary and EEG Services, Memorial Hospital, Hollywood

Marlene Thomas, R.R.T., Assistant Director, Respiratory Care, West Volusia Hospital, Deland

The Division of Vocational, Adult, and Community Education expresses appreciation to the following educators in respiratory therapy technician programs throughout the state who reviewed the standards included in this MAP. They are:

Charles Carroll, R.R.T., M.Ed., Chair, Allied Health Department, Daytona Beach Community College, Daytona Beach

Marsha Karkheck, R.R.T., M.Ed., Department Chair, Respiratory Therapy Technician, Pinellas Technical Education Center, St. Petersburg

Stephen Mikles, R.R.T., Program Director, Respiratory Care, St. Petersburg Junior College, Pinellas Park

Carol Miller, R.R.T., M.S., Chair, Cardiopulmonary Sciences, Miami-Dade Community College, Miami

John Prince, R.R.T., Department Head, Respiratory Care, Broward Community College, Fort Lauderdale
James Woods, R.R.T., M.S., Director, Allied Health, Florida Community College at Jacksonville, Jacksonville
David Yonutas, R.R.T., M.S., Coordinator, Respiratory Therapy Program, Santa Fe Community College, Gainesville

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***This MAP contains shortened standards. The full text of every standard in this program can be found in the Appendix.**

OVERVIEW

The Career MAP includes the competencies required for entry into the work force as a respiratory therapy technician. Business and industry representatives have recommended that students in this field master these competencies in order to become employable. Local education agencies (LEAs) may adapt these competencies to meet their work-force needs.

Purposes of the MAP

The purposes of the MAP are to display the student performance standards (SPSs) required by the LEA and to document the level of achievement on SPSs that the student demonstrates. This MAP contains some shortened standards. The full text of every standard can be found in the Appendix.

How to Use the MAP

Administrator and Instructor. The administrator and instructor can use Career MAPs in curriculum planning, program updating and improvement, and teacher recruitment, selection, and updating. If the LEA changes or adds SPSs, the revised or additional SPSs should be included in the blank boxes that appear within each intended outcome or at the end of this MAP.

Instructor. The instructor can use Career MAPs to keep track of student progress on SPSs. By periodically reviewing the ratings on standards, the instructor can identify a student's strengths and weaknesses and on that basis identify the skills for which the student needs remedial instruction or advanced training. MAPs can also be useful in student counseling and evaluation.

Student. The student may use the MAP to show potential employers the performance standards he or she has mastered. In order to present a complete record, the student should encourage the instructor to rate his or her level of achievement on all the appropriate SPSs and to fill in the verification form in the back of this MAP.

Employer. The MAP shows an employer the SPSs mastered by the student (a prospective employee) and the proficiency level achieved on each one. This information can help the employer make decisions about hiring, job assignments, and job-training needs.

Rating Student Performance

Performance Competencies. Ratings on SPSs should be based upon business/industrial performance standards. The evaluator observes and evaluates student performance as he or she would in the role of the employer or supervisor.

For each skill listed, the learner receives a rating of 1, 2, or 3. Each rating indicates a particular level of achievement:

1 = Learner demonstrates knowledge and understanding of this SPS, but is not yet able to apply that knowledge or understanding.

2 = Learner performs this SPS satisfactorily with only periodic supervision.

3 = Learner performs this SPS satisfactorily without supervision.

Whenever a performance standard is demonstrated, the instructor checks the appropriate rating box (1, 2, or 3) and initials and dates the verification line. If the student later demonstrates a higher level of achievement on a performance competency, the instructor checks the higher level and then enters his or her initials and the new date on the verification line, as shown in the following example:

01.07
Perform and evaluate appropriate cardiorespiratory tests.
1 ☐
2 ☑
3 ☑
K ☐
LM 2-1-90 JL 3-15-90
Verification

Knowledge Competencies. For each SPS that is a knowledge competency only, with no manipulative skill involved, only one level of achievement is possible. If the student masters the competency, he or she receives a check in the bottom box ("K"), as shown below:

08.05
List the types of isolation with the required apparel/procedures, etc.
1 ☐
2 ☐
3 ☐
K ☑
LM 1-21-90
Verification

NOTE: An SPS without a checked rating indicates that the learner has not mastered the standard from lack of ability, time, opportunity, or need (the student's area of specialization may not have required it).

01.0 SELECT, REVIEW, OBTAIN, AND INTERPRET PATIENT DATA.

*See Appendix.

01.01 Review existing data in patient record. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.02* Collect and evaluate additional pertinent clinical information . . . including inspection, palpation, percussion, auscultation, and vital signs. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.03 Collect and evaluate additional pertinent clinical information by inspection of chest x-ray and review of ABG's. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
01.04 Perform and evaluate bedside pulmonary assessment and procedures (Vt, FVC, NIF, etc.). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.05 Interview and evaluate patient's current medical status. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.06 Recommend and/or obtain additional pertinent data based on patient assessment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
01.07 Perform and evaluate appropriate cardiorespiratory tests. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.08 Determine appropriateness of prescribed respiratory care plan and recommend modification where indicated. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.09 Participate in development of respiratory care plan. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

02.0 SELECT, ASSEMBLE, AND CHECK EQUIPMENT FOR PROPER FUNCTION, OPERATION, CLEANLINESS, AND CALIBRATION.

*See Appendix.

02.01 Select suitable equipment from available supply appropriate to respiratory care plan. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.02 Assemble parts and check for completeness, condition, cleanliness, and calibration. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.03 Check calibration and operation of device and correct malfunctions or send for repair (quality control). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
02.04* Clean, disinfect, wrap, and sterilize equipment, using appropriate method . . . and following Centers for Disease Control (CDC) guidelines. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.05 Maintain, store, and transport equipment, and identify gases. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.06 Maintain and monitor oxygen storage systems and cylinder banks. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

03.0 INITIATE AND CONDUCT THERAPEUTIC PROCEDURES; RECOGNIZE WHEN PRESCRIBED THERAPEUTIC PROCEDURE IS INAPPROPRIATE; AND FOLLOW PROPER PROTOCOL FOR NOTIFICATION.

*See Appendix.

03.01
Explain planned therapy and goals to patients in nontechnical, understandable terms to achieve optimal therapeutic outcome.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.02
Protect patient from nosocomial infection by adherence to infection control policies and procedures.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.03
Conduct prescribed therapeutic procedures to achieve the maintenance of a patent airway, including the care of artificial airways.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.04
Perform sterile suctioning technique of endotracheal tube and nasopharyngeal/oropharyngeal airway (for secretion removal).
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.05*
Conduct prescribed therapeutic procedures . . . including the preparation of specimens for analysis.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.06
Conduct prescribed therapeutic procedures to achieve adequate spontaneous and mechanical ventilation.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.07
Conduct prescribed therapeutic procedures to achieve adequate arterial and tissue oxygenation, including CPAP and/or special therapeutic gases.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.08
Evaluate and monitor prescribed respiratory therapy and patient's response to therapy.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.09*
Initiate, conduct, and modify prescribed therapy . . . appropriate laboratory data within the limitations of the prescription.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.10
Initiate and conduct pulmonary rehabilitation and home care.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.11
Terminate treatments based on patient's adverse reaction to any type of therapy being administered.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.12
Perform and verify required computations and note erroneous data.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.13
Initiate and provide emergency resuscitation.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.14
Perform cardiopulmonary resuscitation on an infant patient.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.15
Perform cardiopulmonary resuscitation on a child.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.16
Perform one-rescuer cardiopulmonary resuscitation on an adult patient.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.17
Perform two-rescuer cardiopulmonary resuscitation on an adult patient.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.18
Perform obstructed airway maneuver on an unconscious adult patient.
1 ☐
2 ☐
3 ☐
K ☐
Verification

03.19 Perform obstructed airway maneuver on a conscious adult patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.20 Set up, assist with, and perform oral intubation on an unconscious adult patient, or model. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.21 Ventilate patient with a manual resuscitator with mask. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.22 Ventilate patient with demand valve unit with mask. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.23 Add an intermittent mandatory ventilation setup to a ventilator circuit. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.24 Add positive and expiratory pressure (PEEP) to ventilator circuit. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.25 Perform extubation of adult patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.26 Monitor return to normal physiology; reintubate if necessary. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

04.0 MAINTAIN RECORDS AND COMMUNICATIONS.

04.01 Use computer system to access and input patient data, as appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.02 Chart on medical record: record therapy and results using conventional terminology as required by hospital policy and regulatory agencies. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.03 Utilize departmental policy manual. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
04.04 Consistently display a professional and positive attitude in all communications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.05 Display respect for patients regardless of race, religion, color, creed, sex, age, or diagnosis. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.06 Maintain confidentiality of all patient records and information. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

05.0 PERFORM PULMONARY-FUNCTION TESTING.

05.01 Obtain pulmonary history. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.02 Perform simple spirometry maneuvers, including tidal volume, minute volume, and vital capacity. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.03 Compute patient normal values. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.04 Recognize normal vs. abnormal results. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.05 Measure lung volumes and capacities. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.06 Perform diffusion studies. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.07 Perform gas distribution tests. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

06.0 DRAW ARTERIAL AND VENOUS BLOOD SAMPLES AND ANALYZE BLOOD GASES AND HEMOGLOBIN VALUES.

06.01 Obtain appropriate equipment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.02 Maintain quality control on blood gas analyzer and co-oximeter. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.03 Identify patient, introduce self, and explain procedure. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
06.04 Perform Allen test or other technique to assess collateral circulation; analyze result. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.05 Wash hands, prepare and collect sample from appropriate site, and place in ice slush. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.06 Apply pressure for required time. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

06.07 Place blood sample into the blood gas analyzer/co-oximeter according to manufacturer's directions. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	06.08 Perform entire procedure following Centers for Disease Control (CDC) guidelines, and taking universal precautions. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

07.0 PERFORM MECHANICAL VENTILATION.

07.01 Recognize indications for ventilation, verifying physician's order as necessary. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.02 Select correct type and/or mode of ventilation. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.03 Determine that ventilator is functioning safely and properly. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
07.04 Connect mechanical ventilator to patient. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.05 Monitor patient physiology and make appropriate ventilator changes if necessary. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.06 Address needs of the patient, including psychological, physical, and emotional. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
07.07 Recognize indications for adjunctive airway maneuvers. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.08 Determine patient's readiness for weaning. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	07.09 Wean patient from ventilator. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
07.10 Monitor patient's return to normal physiology; reventilate if necessary. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

08.0 PERFORM INFECTION-CONTROL TECHNIQUES.

08.01 Apply infection-control techniques following Centers for Disease Control (CDC) guidelines, and taking universal precautions. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	08.02 Don isolation cap, mask, gown, and gloves. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	08.03 Perform prescribed therapy in an isolation setting. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
08.04 Discard/double-bag used equipment and arrange for proper sterilization or disposal. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	08.05 List the types of isolation with the required apparel/procedures, etc. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	08.06 Chart activity related to isolation setting. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

09.0 PERFORM CLEANING, STERILIZATION, AND GENERAL MAINTENANCE OF EQUIPMENT.

09.01 Clean used equipment, wrap and sterilize, using appropriate method (gas, temperature, chemical). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	09.02 Operate sterilizer, if applicable, or send to central service. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	09.03 Store returned sterilized equipment safely, being mindful of sterilization expiration dates. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
09.04 Perform routine maintenance according to manufacturer's directions and maintain appropriate maintenance records. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

10.0 INSTRUCT PATIENT IN CARDIORESPIRATORY REHABILITATION AND HOME CARE.

10.01 Instruct patient and family in equipment cleaning, care, and use. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	10.02 Instruct patient and family in proper breathing/coughing exercises. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	10.03 Instruct patient and family in physical exercise and in activities of daily living. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
10.04 Instruct patient and family about the disease state. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	10.05 Instruct patient and family about when to call the physician. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	10.06 Instruct patient and family in how to recognize deterioration in physical status. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
10.07 Instruct patient and family in proper drug dosage and administration techniques and in the importance of the therapy. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	10.08 Instruct patient and family in proper therapy techniques. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

11.0 DEMONSTRATE EMPLOYABILITY SKILLS.

11.01 Conduct a job search. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.02 Secure information about a job. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.03 Identify documents that may be required when applying for a job. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
11.04 Complete a job application. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.05 Demonstrate competence in job interview techniques. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	11.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

RESPIRATORY THERAPY TECHNICIAN

11.07
Identify acceptable work habits.
1 ☐
2 ☐
3 ☐
K ☐
Verification

11.08
Demonstrate knowledge of how to make job changes appropriately.
1 ☐
2 ☐
3 ☐
K ☐
Verification

11.09
Demonstrate acceptable employee health habits.
1 ☐
2 ☐
3 ☐
K ☐
Verification

11.10
Identify state licensure and continuing education requirements.
1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

12.0 ADMINISTER CARDIORESPIRATORY DRUGS.

*See Appendix.

12.01*
Demonstrate knowledge of drug classifications, actions, and uses . . . how supplied, mixing instructions, storage, and laboratory test inferences.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.02
Recognize the critical importance of this activity and follow directions.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.03
Verify physicians' orders.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.04
Prepare medication for administration.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.05
Identify patient; introduce self.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.06
Administer drug.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.07
Document administering of drug in all appropriate records.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.08
Recognize the symptoms of drug idiosyncracies.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.09
Identify adverse drug reactions and take appropriate action.
1 ☐
2 ☐
3 ☐
K ☐
Verification

12.10
Recognize anaphylactic shock.
1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐
2 ☐
3 ☐
K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

13.0 ASSIST THE PHYSICIAN PERFORMING SPECIAL PROCEDURES, AS APPROPRIATE.

13.01 Assist the physician performing a bronchoscopy, as appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.02 Assist the physician performing a thoracentesis, as appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.03 Assist the physician performing a tracheostomy, as appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.04 Assist the physician performing insertion of chest tubes, as appropriate. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.05 Assist the physician performing invasive monitoring. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

14.0 DEMONSTRATE KNOWLEDGE OF IMMUNE-DEFICIENCY DISEASES, INCLUDING AIDS.

14.01 Distinguish between fact and fallacy about the transmission and treatment of immune-deficiency diseases, including HIV infection. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.02 Identify community resources and services available to the victims of immune-deficiency diseases. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.03 Identify at-risk behaviors which promote the spread of AIDS and the public education necessary to combat the spread of immune-deficiency diseases. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
14.04 Apply infection-control techniques designed to prevent the spread of diseases to patients following Centers for Disease Control (CDC) guidelines. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.05 Demonstrate knowledge of the legal aspects of AIDS. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

RESPIRATORY THERAPY
TECHNICIAN

VERIFICATION

Each instructor who rates this student on competencies in this MAP should fill in one of the boxes below.

Initials
Signature
Title
School Name
School Address

Initials
Signature
Title
School Name
School Address

Initials
Signature
Title
School Name
School Address

NOTES

This section of the MAP is provided for the instructor, employer, or student to list additional qualifying statements or other pertinent information. All comments should be initialed for verification.

APPENDIX

Below is a listing of all outcomes and student performance standards for Respiratory Therapy Technician.

01.0 SELECT, REVIEW, OBTAIN, AND INTERPRET PATIENT DATA.

01.01
Review existing data in patient record.

01.02
Collect and evaluate additional pertinent clinical information by assessing patient's overall cardiorespiratory status, including inspection, palpation, percussion, auscultation, and vital signs.

01.03
Collect and evaluate additional pertinent clinical information by inspection of chest x-ray and review of ABG's.

01.04
Perform and evaluate bedside pulmonary assessment and procedures (Vt, FVC, NIF, etc.).

01.05
Interview and evaluate patient's current medical status.

01.06
Recommend and/or obtain additional pertinent data based on patient assessment.

01.07
Perform and evaluate appropriate cardiorespiratory tests.

01.08
Determine appropriateness of prescribed respiratory care plan and recommend modification where indicated.

01.09
Participate in development of respiratory care plan.

02.0 SELECT, ASSEMBLE, AND CHECK EQUIPMENT FOR PROPER FUNCTION, OPERATION, CLEANLINESS, AND CALIBRATION.

02.01
Select suitable equipment from available supply appropriate to respiratory care plan.

02.02
Assemble parts and check for completeness, condition, cleanliness, and calibration.

02.03
Check calibration and operation of device and correct malfunctions or send for repair (quality control).

02.04
Clean, disinfect, wrap, and sterilize equipment, using appropriate method (gas, temperature, chemical), and following Centers for Disease Control (CDC) guidelines.

02.05
Maintain, store, and transport equipment, and identify gases.

02.06
Maintain and monitor oxygen storage systems and cylinder banks.

03.0 INITIATE AND CONDUCT THERAPEUTIC PROCEDURES; RECOGNIZE WHEN PRESCRIBED THERAPEUTIC PROCEDURE IS INAPPROPRIATE; AND FOLLOW PROPER PROTOCOL FOR NOTIFICATION.

03.01
Explain planned therapy and goals to patients in nontechnical, understandable terms to achieve optimal therapeutic outcome.

03.02
Protect patient from nosocomial infection by adherence to infection control policies and procedures.

03.03
Conduct prescribed therapeutic procedures to achieve the maintenance of a patent airway, including the care of artificial airways.

03.04
Perform sterile suctioning technique of endotracheal tube and nasopharyngeal/oropharyngeal airway (for secretion removal).

03.05
Conduct prescribed therapeutic procedures to achieve the removal of bronchopulmonary secretions, including the preparation of specimens for analysis.

03.06
Conduct prescribed therapeutic procedures to achieve adequate spontaneous and mechanical ventilation.

03.07
Conduct prescribed therapeutic procedures to achieve adequate arterial and tissue oxygenation, including CPAP and/or special therapeutic gases.

03.08
Evaluate and monitor prescribed respiratory therapy and patient's response to therapy.

03.09
Initiate, conduct, and modify prescribed therapy, based on patient's response and/or appropriate laboratory data within the limitations of the prescription.

03.10
Initiate and conduct pulmonary rehabilitation and home care.

03.11
Terminate treatments based on patient's adverse reaction to any type of therapy being administered.

03.12
Perform and verify required computations and note erroneous data.

03.13
Initiate and provide emergency resuscitation.

03.14
Perform cardiopulmonary resuscitation on an infant patient.

03.15
Perform cardiopulmonary resuscitation on a child.

03.16
Perform one-rescuer cardiopulmonary resuscitation on an adult patient.

03.17
Perform two-rescuer cardiopulmonary resuscitation on an adult patient.

03.18
Perform obstructed airway maneuver on an unconscious adult patient.

03.19
Perform obstructed airway maneuver on a conscious adult patient.

03.20
Set up, assist with, and perform oral intubation on an unconscious adult patient, or model.

03.21
Ventilate patient with a manual resuscitator with mask.

03.22
Ventilate patient with demand valve unit with mask.

03.23
Add an intermittent mandatory ventilation setup to a ventilator circuit.

03.24
Add positive and expiratory pressure (PEEP) to ventilator circuit.

03.25
Perform extubation of adult patient.

03.26
Monitor return to normal physiology; reintubate if necessary.

04.0 MAINTAIN RECORDS AND COMMUNICATIONS.

04.01
Use computer system to access and input patient data, as appropriate.

04.02
Chart on medical record: record therapy and results using conventional terminology as required by hospital policy and regulatory agencies.

04.03
Utilize departmental policy manual.

04.04
Consistently display a professional and positive attitude in all communications.

04.05
Display respect for patients regardless of race, religion, color, creed, sex, age, or diagnosis.

04.06
Maintain confidentiality of all patient records and information.

05.0 PERFORM PULMONARY-FUNCTION TESTING.

05.01
Obtain pulmonary history.

05.02
Perform simple spirometry maneuvers, including tidal volume, minute volume, and vital capacity.

05.03
Compute patient normal values.

05.04
Recognize normal vs. abnormal results.

05.05
Measure lung volumes and capacities.

05.06
Perform diffusion studies.

05.07
Perform gas distribution tests.

06.0 DRAW ARTERIAL AND VENOUS BLOOD SAMPLES AND ANALYZE BLOOD GASES AND HEMOGLOBIN VALUES.

06.01
Obtain appropriate equipment.

06.02
Maintain quality control on blood gas analyzer and co-oximeter.

06.03
Identify patient, introduce self, and explain procedure.

06.04
Perform Allen test or other technique to assess collateral circulation; analyze result.

06.05
Wash hands, prepare and collect sample from appropriate site, and place in ice slush.

06.06
Apply pressure for required time.

06.07
Place blood sample into the blood gas analyzer/co-oximeter according to manufacturer's directions.

06.08
Perform entire procedure following Centers for Disease Control (CDC) guidelines, and taking universal precautions.

07.0 PERFORM MECHANICAL VENTILATION.

07.01
Recognize indications for ventilation, verifying physician's order as necessary.

07.02
Select correct type and/or mode of ventilation.

07.03
Determine that ventilator is functioning safely and properly.

07.04
Connect mechanical ventilator to patient.

07.05
Monitor patient physiology and make appropriate ventilator changes if necessary.

07.06
Address needs of the patient, including psychological, physical, and emotional.

07.07
Recognize indications for adjunctive airway maneuvers.

07.08
Determine patient's readiness for weaning.

07.09
Wean patient from ventilator.

07.10
Monitor patient's return to normal physiology; reventilate if necessary.

08.0 PERFORM INFECTION-CONTROL TECHNIQUES.

08.01
Apply infection-control techniques following Centers for Disease Control (CDC) guidelines, and taking universal precautions.

08.02
Don isolation cap, mask, gown and gloves.

08.03
Perform prescribed therapy in an isolation setting.

08.04
Discard/double-bag used equipment and arrange for proper sterilization or disposal.

08.05
List the types of isolation with the required apparel/procedures, etc.

08.06
Chart activity related to isolation setting.

09.0 PERFORM CLEANING, STERILIZATION, AND GENERAL MAINTENANCE OF EQUIPMENT.

09.01
Clean used equipment, wrap and sterilize, using appropriate method (gas, temperature, chemical).

09.02
Operate sterilizer, if applicable, or send to central service.

09.03
Store returned sterilized equipment safely, being mindful of sterilization expiration dates.

09.04
Perform routine maintenance according to manufacturer's directions and maintain appropriate maintenance records.

10.0 INSTRUCT PATIENT IN CARDIORESPIRATORY REHABILITATION AND HOME CARE.

10.01
Instruct patient and family in equipment cleaning, care, and use.

10.02
Instruct patient and family in proper breathing/coughing exercises.

10.03
Instruct patient and family in physical exercise and in activities of daily living.

10.04
Instruct patient and family about the disease state.

10.05
Instruct patient and family about when to call the physician.

10.06
Instruct patient and family in how to recognize deterioration in physical status.

10.07
Instruct patient and family in proper drug dosage and administration techniques and in the importance of the therapy.

10.08
Instruct patient and family in proper therapy techniques.

11.0 DEMONSTRATE EMPLOYABILITY SKILLS.

11.01
Conduct a job search.

11.02
Secure information about a job.

11.03
Identify documents that may be required when applying for a job.

11.04
Complete a job application.

11.05
Demonstrate competence in job interview techniques.

11.06
Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.

11.07
Identify acceptable work habits.

11.08
Demonstrate knowledge of how to make job changes appropriately.

11.09
Demonstrate acceptable employee health habits.

11.10
Identify state licensure and continuing education requirements.

12.0 ADMINISTER CARDIORESPIRATORY DRUGS.

12.01
Demonstrate knowledge of drug classifications, actions, and uses, route of administration and usual adult doses, mathematics needed to calculate divided or children's dosage, contraindications, drug interactions, adverse reactions, how supplied, mixing instructions, storage, and laboratory test inferences.

12.02
Recognize the critical importance of this activity and follow directions.

12.03
Verify physicians' orders.

12.04
Prepare medication for administration.

12.05
Identify patient; introduce self.

12.06
Administer drug.

12.07
Document administering of drug in all appropriate records.

12.08
Recognize the symptoms of drug idiosyncracies.

12.09
Identify adverse drug reactions and take appropriate action.

12.10
Recognize anaphylactic shock.

13.0 ASSIST THE PHYSICIAN PERFORMING SPECIAL PROCEDURES, AS APPROPRIATE.

13.01
Assist the physician performing a bronchoscopy, as appropriate.

13.02
Assist the physician performing a thoracentesis, as appropriate.

13.03
Assist the physician performing a tracheostomy, as appropriate.

13.04
Assist the physician performing insertion of chest tubes, as appropriate.

13.05
Assist the physician performing invasive monitoring.

14.0 DEMONSTRATE KNOWLEDGE OF IMMUNE-DEFICIENCY DISEASES, INCLUDING AIDS.

14.01
Distinguish between fact and fallacy about the transmission and treatment of immune-deficiency diseases, including HIV infection.

14.02
Identify community resources and services available to the victims of immune-deficiency diseases.

14.03
Identify at-risk behaviors which promote the spread of AIDS and the public education necessary to combat the spread of immune-deficiency diseases.

14.04
Apply infection-control techniques designed to prevent the spread of diseases to patients following Centers for Disease Control (CDC) guidelines.

14.05
Demonstrate knowledge of the legal aspects of AIDS.

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